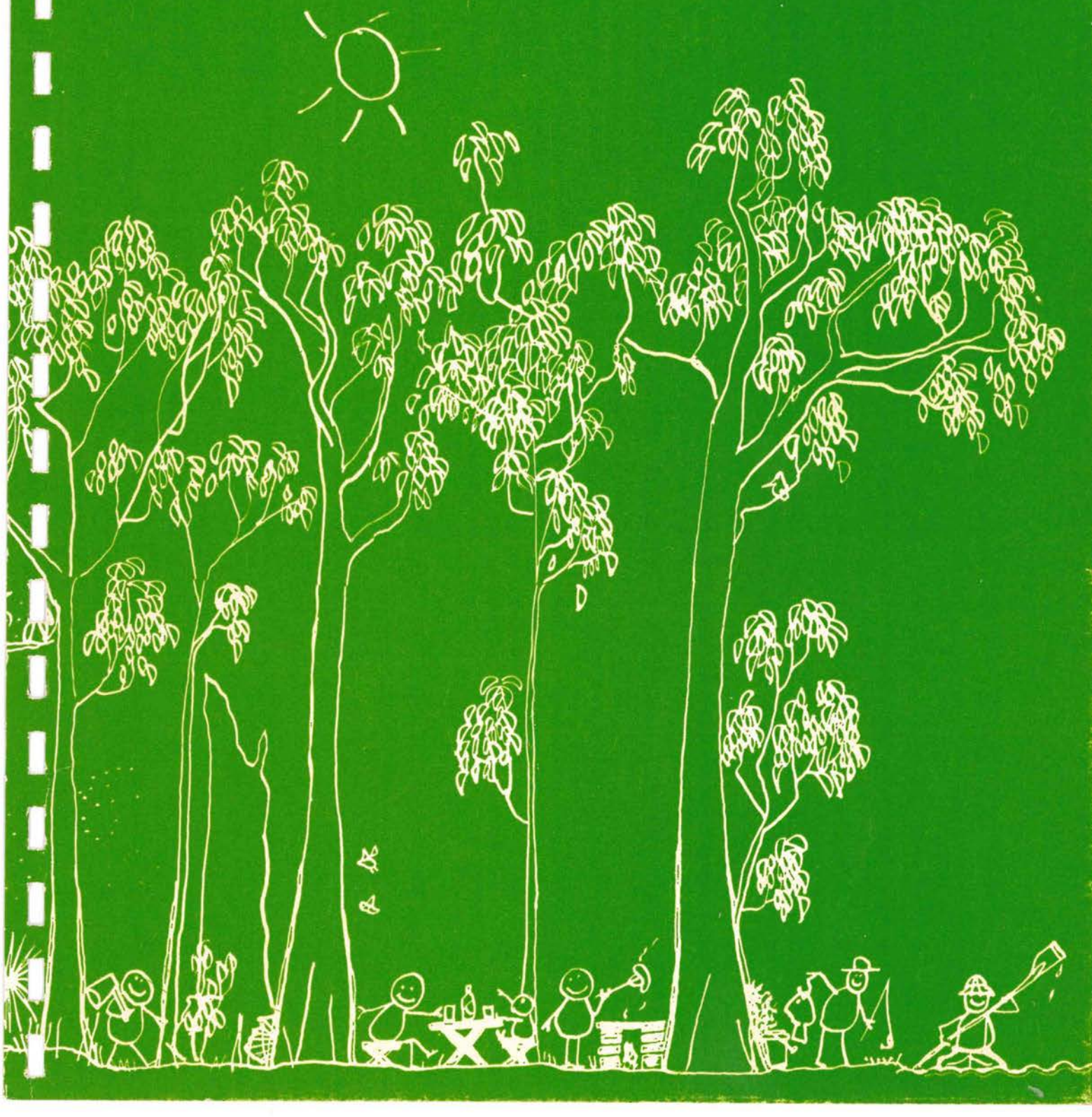
The Threat to the Forests:

A Submission to
the Australian Senate Standing
Committee on the Social Environment
concerning the
Impending Manjimup Wood-Chip Project
from the Campaign to Save Native Forests (W.A.)



Campaign to Save Native Forests (W.A.)

c/-The Environment Centre, 258 Mill Point Road, South Perth, 6051

The Australian Senate Standing Committee on Social Environment,

Senator J.B. Keefe	**Senator C.S. Davidson**
Senator P.E. Baume	**Senator J.L. Melzer**
Senator N.T. Bonner	**Senator J.A. Mulvihill**

Dear Senators,

Our Campaign has pleasure in presenting its submission to your inquiry into the wood-chip industry. We believe that the disastrous consequences for the environment of the impending Manjimup wood-chip project require decisive and urgent action.

Due to the secrecy and haste which has surrounded the decision making by successive Western Australian governments very few members of our community have been aware of the implications of this project. However, in only a few short months our Campaign has ascertained the wide extent of support among ordinary citizens for multiple usage of W.A.'s precious remaining native forests.

On the other hand the response of the W.A. Chip and Pulp Co. with professional public relations personnel, free junkets with wining and dining for journalists and such tactics, has indicated that those who stand to profit from the destruction of native forests are prepared to expend considerable resources to manipulate public opinion. The ready and in some instances, material support they have received from the Western Australian government in this is an ominous sign.

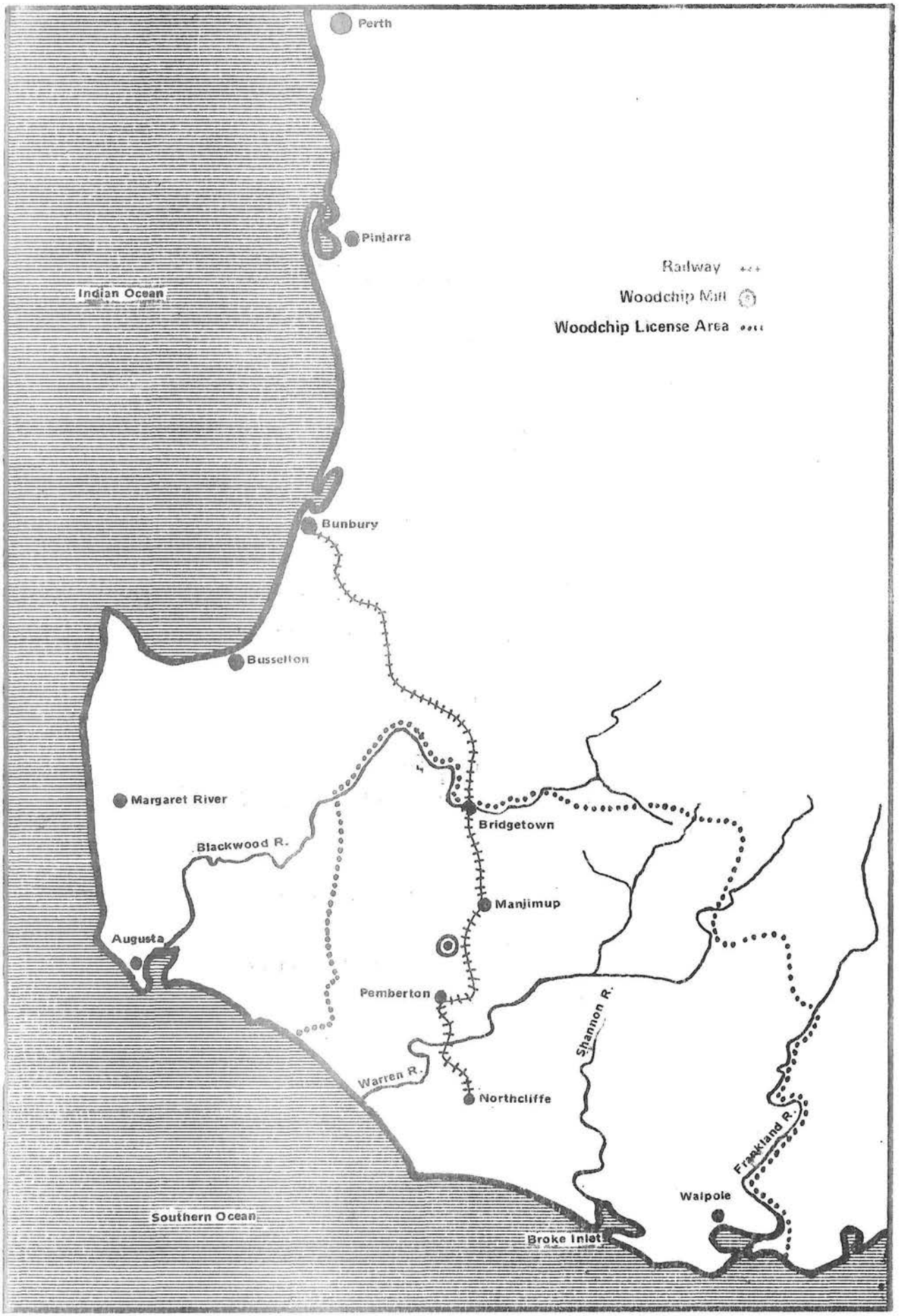
We suggest that the Australian Senate Standing Committee on the Social Environment will earn the gratitude of present and future generations of Western Australians, and their visitors, if it initiates the introduction of multiple usage into W.A.'s native forests. Our Campaign is very much a nascent and developing one and we look forward to the opportunity of meeting with the Committee to elaborate on our submission and to present our views on events which transpire between now and when the Committee visits W.A.

Respectfully submitted,

D.S. Adair
A.G. Thamo
W.I. Thomas
for The Campaign to Save Native Forests (W.A.)

TABLE OF CONTENTS

Figure 1: Manjimup Wood-chip project license area



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Prologue: THE MANJIMUP WOOD-CHIP PROJECT

The Wood Chipping Industry Agreement Act, 1969, between the State of Western Australia, the W.A. Chip and Pulp Co. Pty. Ltd. and Bunning Timber Holdings, granted a license to those companies to extract not less than 500,000 tons (508,024 tonnes) green weight per annum of woodchips from a license area centred around the Manjimup-Pemberton district and containing 0.49 million ha (27%) of Western Australia's State Forests. The quantity of chips to be annually extracted from the license area was in 1973 increased to 680,720 tonnes green weight in an Amendment to the 1969 Agreement Act. In each case the tonnage figure does not include the supply of sawmill waste to the chip mill; obligations imposed by the Agreement Act Amendment Act will be fulfilled directly from State Forests.

Although the Act entitles the W.A. Chip and Pulp Co. to the stated annual tonnage for only 15 years, it authorises the continuation of chipping operations beyond this period, at the discretion of the Minister for Forests, though any extension would require the granting of a new export license by the Australian Government. At the estimated felling rate of 11,000 ha (25,000 acres) per annum, the license area may be expected to provide a source of chipwood for no more than 36 years. However the Agreement Act requires the W.A. Chip and Pulp Co. to investigate the feasibility of establishing a pulp mill within 200 km of Manjimup; the cumulative chip requirements resulting from such an establishment would exhaust the license area of its chipwood potential after 29 years. This figure is further reduced to 26 years by the reservation of a 40,000 ha section in the north east of the license area for ecological purposes. Therefore, the Western Australian chip and pulp industry may, in 26 years time, be forced to either cut over the license area a second time, extend operations to other forests, or close down.

The W.A. Forests Department will receive $0.74 royalties per cubic metre of wood sent to the chip mill (compared with $1.20/$m^3$ for Marri sawlogs). The forests will be logged by W.A. Chip and Pulp Co. employees under the supervision of Forests Department officers. However the responsibility for (and cost of) regeneration of the forests, protection of young regrowth from fire, the control of **Phytophthora cinnamomi** ("Jarrah dieback"), and environmental research and monitoring belongs to the W.A. Forests Department. Other State Government Departments are or will be bearing the cost of upgrading railway facilities, harbour dredging and wharf construction at Bunbury, road repair where logging vehicles use public roads and further environmental research and monitoring. Estimates of employment due to the project have varied from an absurd high of 2,600 to the more realistic figure of 340. Unfortunately, no studies have been made to assess the employment potentials if the capital invested in the wood chip industry were alternatively spent.

Marri (**Eucalyptus calophylla R.Br.**), or Redgum, is the principal wood resource to be utilised by the wood-chip project, with between **5 and 20%** of the total chip resource being Karri (**Eucalyptus diversicolor F. Muell**). Marri, the most widespread of South-Western tree species, usually occurs in association with either Karri or Jarrah (**Eucalyptus marginata Sm.**). Karri-Marri and Jarrah-Marri forests occupy, respectively, 138,000ha and 381,000ha of the license area, the ration of Marri to either of the other two principal tree species averaging 1:1. Although it has been announced in *Woodchip News,* the publicity organ of the W.A. Chip and Pulp Co., that Jarrah is now acceptable as a chip resource, we are not aware of any alteration to the project to utilise this wood which was unacceptable at the time of the 1973 Act and Agreement.

Karri-Marri forest will be clear-felled in coupes of up to 200 ha (500 acres) and Jarrah-Marri forest will be heavily cut over in coupes of up to 800ha (2000 acres). The "heavy selection cut" of the Jarrah-Marri forest will vary in effect from virtual clear-felling to slight logging, depending on the size and condition of the Jarrah trees. To quote the Environmental Impact Statement produced by the W.A. Forests Department,

> "Clear-cutting with seed trees is the system intended for use in the KM (Karri-Marri) type. Karri seed trees will be left standing following utilisation cutting for both species. Cull trees (trees of no commercial value due to defects or other factors) will then be fallen and scrub rolled flat by bulldozer in preparation for a regeneration burn, which will take place in summer when sampling indicates a satisfactory seed crop in the crowns of the seed trees. The burn will be intense, and will result in removal of all ground competition, creation of widespread ashbed on bare mineral soil, part removal of slash (debris), and stimulation of seedfall onto the cool ash shortly afterwards ... The JM (Jarrah-Marri) forest type will be cut under a heavy selection system which involves the removal of all saleable marri and jarrah, except for vigorous sound and well formed jarrah stems in the smaller diameter classes (below 500mm diameter at breast height).

Unsaleable cull trees will then be removed by falling or poisoned by stem injection (with the herbicide Tordon), following which area will be subject to a top disposal burn." (Our insertions).

Regeneration of Karri will be effected through the retention of a seed source (the seed trees), while regeneration of Marri and Jarrah will occur primarily from lignotubers (fire resistant subterranean stems) and coppicing (shooting from stumps). The defoliant herbicide 2-4-5-T will be used to reduce competition from non-commercial plants, where this is regarded as necessary.

The Forests Department proposes environmental "safeguards" in the form of forested stream and road verges (200m wide) and the exclusion of a north-east portion of the license area from logging. The likely efficacy of these measures for the minimisation of salinity increase, stream degradation, wildlife destruction and **Phytophthora** distribution are discussed in Appendix 2

Woodchipping operations will be carried out in co-operation with saw milling operations such that the logs unsuitable for saw milling but acceptable for chipping will be directed to the chip mill. From the chip mill, wood chips will be railed to Bunbury and stockpiled ready for transference to the buyers – the Marubeni Corporation – who will provide shipment to Japan.

THE THREAT TO THE FORESTS

Two basic premises underly the policies and actions of the Campaign to Save Native Forests (W.A.):

- Firstly, that Western Australia's native forests should be conserved and managed in a manner which ensures that the various needs of all sections of the community in relation to forest resources are met and maintained for present and future generations.

- Secondly, that the implementation of this policy is particularly urgent in view of the greatly depleted and diminished state of the native forest of Western Australia after only 146 years of European settlement.

We are particularly pleased that this enquiry into –

> *"The impact on the Australian Environment of the current wood-chip industry programme".* [1]

is being conducted by the Australian Senate Standing Committee on the Social Environment.

In the past governmental approvals of the environmental impacts of the wood-chip industry have been portrayed in terms of physical and biological changes without the social implications of these being properly assessed. In particular virtually no consideration of the impact of the Manjimup woodchip project in terms of the actual and potential functions of forests, appears to have been undertaken by the Western Australian Government and Parliament, or the Australian Government in approving this project.

A forestry policy based on total community need, present and future, is generally described as Multiple Usage. We elaborate on this concept,and its implications for W.A. forestry and the wood-chip industry in particular, in Chapter 2 of this submission. The term Multiple Usage has been plagiarised by advocates of its antithesis, intensive production forestry, who see forests as sources of timber and pulp wood, with only tokenistic acknowledgement of their other functions. The aesthetic, recreational, educational and scientific values of Western Australia's native forests are manifested in the variety of ways by which they can enrich our community life. In addition to this, many of our members and supporters have stressed an inherent and non-utilitarian value in conserving this essential part of our National Estate. In practice these two views coincide and we include them within the blanket concept of Multiple Usage.

The second of our basic premises, the urgency of the need for the introduction of Multiple Usage into Western Australian forestry in view of the greatly depleted and diminished nature of the State's native forest, is clearly evident. In less than 150 years, European settlement has wreaked havoc on the native forest environment, leaving a heavy responsibility on the present generation to reverse this trend. Thus far, this is a responsibility which both legislators and administrators have consistently failed to meet.

It has been estimated that the percentage of Australia covered by native forest has shrunk from 15% to 4% since 1788, or a reduction to about one quarter of the original area.[2] In Western Australia the percentage reduction is of the same order with State Forest constituting only 0.72% of the area of the state.[3] The wood-chip license area contains about 25% of the State forest and virtually all the wet sclerophyll forest in the State (the only Karri *(Eucalyptus diversicolor)* forest in the world!). We will demonstrate in chapter 2 that the operations associated with the wood-chip industry, at least on the scale and intensity of the present Agreement, are incompatible with the regeneration of native forest in the proper sense of that term. We reject entirely the values implicit in the following statement by the manager of W.A. Chip and Pulp Co. Pty. Ltd., Mr. J.A. Oldham and published in a Perth newspaper in response to our Campaign:

> *"I'd agree the forest is changed by woodchipping, but these changes are justified – the end result is an* improved *environment"* (Emphasis ours).[4]

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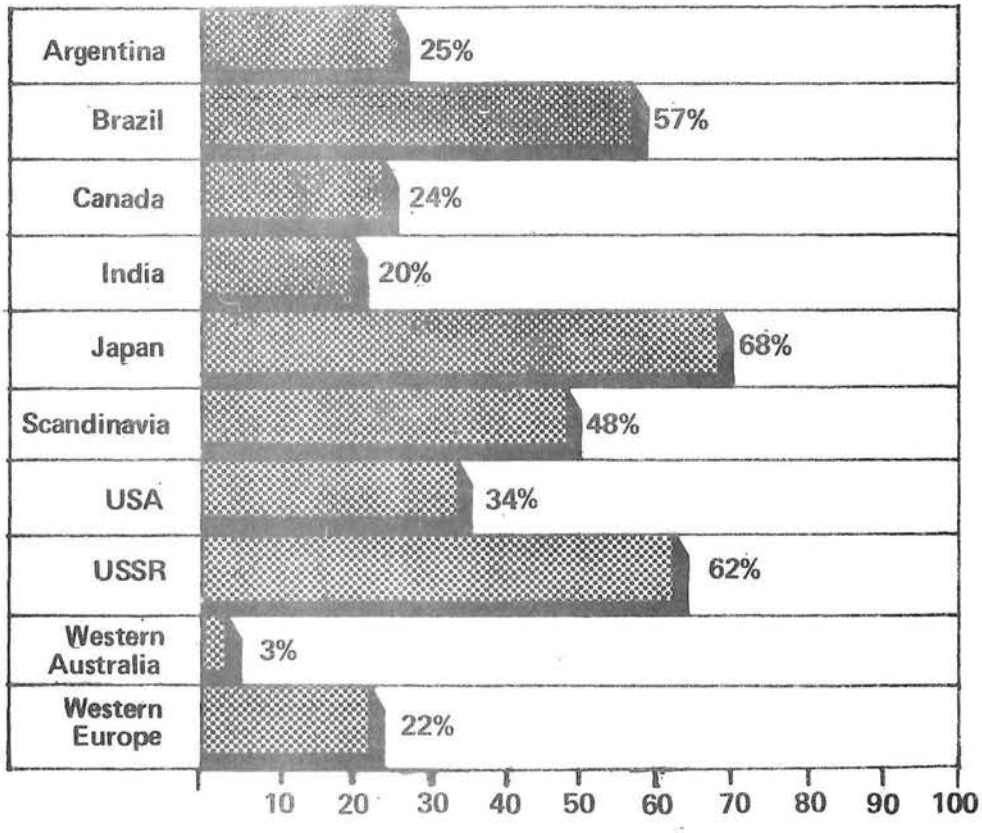
1. Australian Senate Resolution, 28th November 1974.
2. Routley R. and V.: *The fight for the forests;* Australian National University, 1974.
3. Environmental Impact Statement: Pages 9, 10. See also Figure 2.
4. *Daily News,* July 10th, 1975, page 10.

Figure 2: Percentage of surface area covered by Forest for Various Countries



The percentage of land area covered by forest in a given country varies according to the definition of forest. The figure given in this table for WA varies somewhat from the figure given for State Forest in the text. State Forest is defined in legislation under the Forests Act. Whilst the area of "true" forest is somewhat larger than the extent of State Forest it is less than the 3% figure quoted above which includes some woodlands.

We shall demonstrate later that the term "improve" is meaningless if used without qualification. That which is an improvement from one point of view can be dysfunctional from another. The alterations alluded to by Mr. Oldham will destroy vast areas of native forest as a unique entity.

Further, the current threat to W.A.'s forests is exacerbated by the fact that in addition to the wood-chip industry, vast areas are threatened by other activities which are also incompatible with the conservation or regeneration of native forest. In particular, the potential scope of bauxite mining operations and the plan of the Forests Department to clear 60,000 ha in the Donnybrook sunklands for planting of exotic pine plantation are causes for grave concern. In addition to these deliberate reductions of area, W.A.'s native forests are being seriously affected by the fungal epidemic *Phytophthora cinnamoni,* which is commonly misnamed Jarrah Dieback. It actually affects a wide range of species of native flora and has at present infested over 240,000 ha of forest.[5] It is suspected that the disease was introduced into the Western Australian environment by European settlement and spread by a variety of activities involving soil dispersal e.g. on the tyres of vehicles, gravel for road construction etc. The CSIRO publication Ecos described it as clearing 10,000 acres a year more efficiently than a bulldozer. The Forests Departments Environmental Impact Statement acknowledged that the wood-chip industry will facilitate the spread of the disease within the license area. The maps contained in Figure 3 indicate the serious nature of the state of W.A.'s native forests. The tables in Figure 2 give a further perspective when we see how relatively poorly endowed with forested land Australia is,[6] This point is even more applicable to Western Australia than to Australia as a whole and raises very serious questions about the rationality of a nation, so poorly endowed with forest resources as Australia (especially W.A.), exporting forest products. The comparison with Japan is particularly ironical in view of the fact that that country is the sole importer of Australian wood-chips, but will not allow its own forests to be chipped.

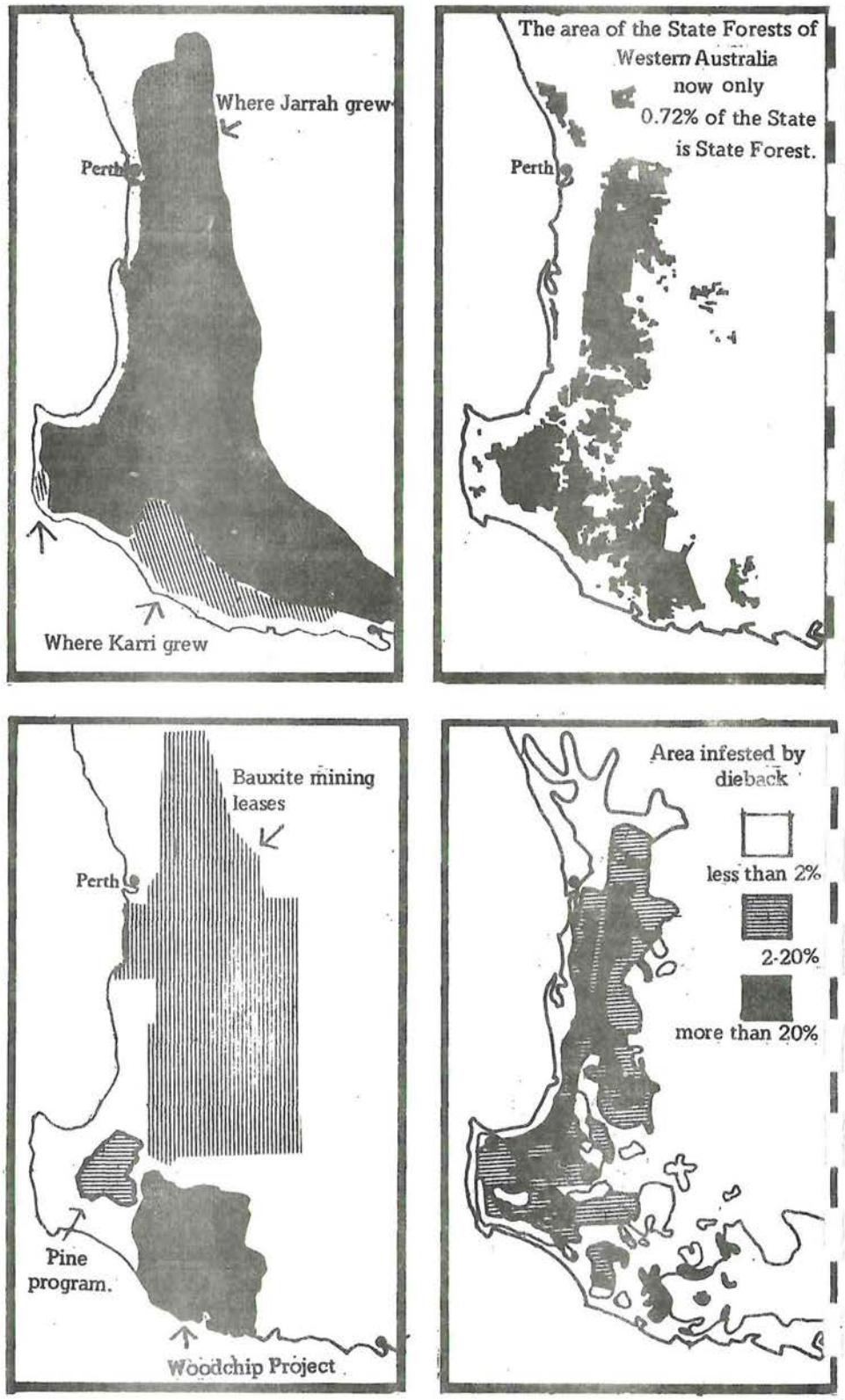
In making this submission to the Australian Senate Standing Committee on the Social Environment we are arguing that the Australian Parliament and Government should intervene to protect the interests of all Western Australians, and the conservation of an essential part of the National Estate, against what we believe are the substantially foreign, narrow and powerful interests which stand to benefit from the Manjimup wood-chip project. In making this appeal we are very mindful of the manner in which the decision to undertake this project was made. We believe that successive Western Australian Governments and Parliaments have demonstrated an inability or unwillingless to make resource allocation decisions in relation to native forests according to the type of criteria inherent in the concept of Multiple Usage. The response of the present Western Australian Government (and the W.A. Chip and Pulp Co. Pty. Ltd. and its industrial Lobbies) to our campaign has indicated that these phenomena persist today.

The sole concession to public evaluation and discussion of the environmental impact of the project prior to the commitment of the State in the form of signing the Woodchipping Industry Agreement and passing its enabling Legislation in 1973 was the Environmental Impact Statement prepared by the W.A. Forests Department. We will demonstrate in Appendix 1 that this is a badly documented rationalisation of a preconceived decision which could not facilitate the type of functions ascribed to it. However, the sequence of events and the fact that the preparation of the Environmental Impact Statement was imposed in haste on the W.A. Government by the Australian Government indicates that it was not intended to encourage or allow a publicly verifiable assessment of the impact of the wood-chip industry on the forests or their various social functions other than production forestry. The result is a grave disservice, the full consequences of which are only now beginning to be widely realised within the Western Australian community.

The earlier wood-chip proposal, approved by the W.A. Parliament in 1969,[7] was disallowed by the then Commonwealth Government because the price of the chips was

5. Shea, S.R.: *Focus on dieback -- a threat to W.A.'s unique jarrah forests;* in Forest Focus No. 14, April 1975, page 8.
6. Haden S., et al: *World Geography of resources;* American Geographical Society of New York, 1956. See also figure 2.
7. Woodchip Industry Agreement Act, 1969.

Figure 3: The State of the Forests



Our Forests have diminished from the estimated 20 million acres that existed when Europeans first arrived to the present 4.5 million acres of State Forest. Very little of this forest resembles the original, and present dangers to the forests have never been so great. Pine plantations have been steadily encroaching into them and now threaten to engulf huge areas. Woodchipping threatens to transform the face of the native forests turning them into "tree farms" also. Strip mining for Bauxite, Mineral Sands and Tin is removing the natural cover and replacing them with plantations. Now the greatest danger of all, Dieback, a fungal disease which is the greatest fungal epidemic since the Irish potato famine threatens to destroy all the Jarrah forest.

too low. For this that government was heavily criticised by the then Minister for Industrial Development and current Premier of W.A., Sir Charles Court. As a result of continued negotiations a new Agreement was drawn up and the amending Act[8] put to the Parliament in mid 1973.

The Environmental Impact Statement was prepared by the Forest Department in six weeks [9] and hence represents a rushed compilation of available data by a committed authority which subscribes explicitly to production forestry rather than Multiple Usage. The document's ascribed function of facilitating public evaluation was not possible because:

- Only 80 copies were published initially, of which an unknown number were sent to the Australian Department of Environment and Conservation in Canberra,[10]
- It was only published about a week prior to the signing of the Agreement,[11]
- No copies were circulated within the University of W.A., W.A.I.T., or the C.S.I.R.O. in Perth, all likely sources of informed evaluation.
- Further, only three were sent to the Conservation Council which represents over 20 local conservation societies.[12]

Not only was public evaluation circumvented until after the commitment was made, but nor could the public's elected representatives carry out their duties properly. The Amendment Act was carried through the Parliament without the Environmental Impact Statement being tabled. The response of the Environmental Protection Authority to this document, in the form of an Interim Report, was only tabled on September 11th, 1973, after the Legislation had been passed by the Legislative Assembly (lower house) and between the second and third readings in the Legislative Council (upper house). The members were irresponsible in making such a major commitment on behalf of the people of W.A. without having crucially important documentation before them, but principal culpability must rest with the ministers responsible.

The Interim Report of the Environmental Protection Authority was sent to the Minister for Environmental Protection the day after his colleagues, the Ministers for Decentralisation and Development, and Forests, had vied with the leader of the Opposition to sing the praises of the bill during the Assembly's third reading of it. This report although seemingly restrained by its terms of reference (or the political context) expressed serious reservations about the project which were summarised, in a masterpiece of understatement, in the last paragraph:

> "8.4. *"The E.P.A. reservations about this project can be summarised as follows:*
>
> *On the one hand the State has the obligation to provide 670,600 tons of green weight timber per annum for fifteen years.*
>
> *On the other hand, guided by research findings, the Conservator can excise areas for various environmental reasons.*
>
> *In simple terms, as research results become available, these two actions may prove to be mutually irreconcilable".*[13]

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8. Woodchip Industry Agreement Act Amendment Act, 1973.
9. Hopkins, E. cited in Conacher A.J.: Geowest 4; University of W.A. 1975. Pages 15 and 41.
10. This inquiry has requested 30 copies of our submission. If a similar number were sent to Canberra a total of 50 would have been circulating in W.A.
11. *The West Australian*, 7th July 1973 and 20th July 1973.
12. Conacher A.J.: *Environment-industry conflict: the Manjimup wood-chip industry proposal, south-western Australia.* Geowest No. 4, University of W.A. 1975. Page 23.
13. Environmental Protection Authority: *Interim report – woodchip industry – Manjimup;* 29th August, 1975. Page 10.

That the Government signed the Agreement and steered the enabling legislation substantially through the Parliamentary process:

- a matter of days after the publication of the Forests Department Environmental Impact Statement
- before receipt of the E.P.A.'s Interim Report and subsequently in apparent disregard of that document's warning about the two-fold irreconcilability of the State's obligations under the Agreement;

indicates a cavalier disregard of the public interest in the allocation of scarce forest resources to competing forms of land utilisation. The mutually exclusive nature of the relationship between the woodchip industry, under the terms of the agreement, and the concept of Multiple Land Usage has been proven by two Government reports completed since the Agreement was signed and the act passed.

The most recent of these is the Report of the Conservation Through Reserves Committee to the Environmental Protection Authority. The Conservation Through Reserves Committees charter was to recommend a series of reserves throughout the state to preserve representative samples of the various types of ecosystem. Hence its terms of reference were management oriented (insofar as it was concerned with a type of management unit viz reserves), rather than functional. However the purpose of these reserves is to perform some of the functions included by us within the concept of Multiple Land Usage and hence we submit that its recommendations are a necessary, but not sufficient, condition of the introduction of Multiple Land Usage into W.A.'s native forests.

The C.T.R.C. divided the state into a number of systems. The wood-chip license area falls within system 2 designated as South Coastal and is affected by two key findings The first is to excise the drainage basin of the Shannon River from wood-chipping operations as a national park. This represents the State's (and the world's) last opportunity to reserve a sizeable segment of substantially virgin Karri forest in a self contained drainage basin. The importance of the latter aspect is explained in Chapter 2 of this submission. This would give the people of W.A. a forest park of magnificent proportions by Australian standards and almost on a par with analogous parks in other countries, the best known example being those containing the famous Redwoods of California. The second proposal affecting the wood-chip license area is the proposal to reserve Broke Inlet at the mouth of the Shannon River as a national park. The Broke Inlet proposal represents the State's last opportunity to preserve an estuary from the affect of industry, urbanisation, agriculture or intensive recreation which have substantially altered all the other southern estuarine areas from their natural state.[14] As will be explained in chapter 2 the ecological viability of the proposal is dependent on the acceptance of the Shannon River Basin recommendation in order that a self contained drainage system is preserved. In summary, the C.T.R.C. report is in part an evaluation of this State's non-wood production needs in relation to native forests and is the type of environmental research mentioned in the extract from the E.P.A. Interim Report quoted previously. The finding that the Shannon River Basin should be excised from the wood-chip license area is crucial for its own value and because of its relationship with the Broke Inlet proposal.

However this finding is mutually exclusive with the Manjimup wood-chip industry as constituted in the Agreement under the Woodchip Industry Agreement Act 1969-73. The C.T.R.C. Report holds that the Shannon River Basin, whilst containing only 6% of the Wood-chip license area holds 20% of the timber.[15] Accordingly, its excision from the license area will involve a 25% increase (in tonnage) in the intensitity of cutting (by tonnage) in the balance of the license area, in order to obtain 670,000 tons p.a. of chip-wood which the state is committed to provide for the W.A. Chip and Pulp Co. This however is not consistent with the environmental premises of the E.I.S. which imply that the proposed intensity of cutting is the maximum which is environmentally sound.[16] We will subsequently argue that even the intensity proposed in the E.I.S. is too great, but on the Forests Department's premises alone, the E.P.A.'s warning about the State's irreconcileable obligations has come true before the industry has even begun.

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14. Conservation Through Reserves Committee Report, Perth 1975: Sections 2·1 and 2·4.

15. C.T.R.C. Report. Page 2-24.

16. Environmental Impact Statement: Pages 31 and 32.

A second government based report which has made an assessment of some of the non-wood production values of the forests is the report of the Committee of Enquiry into the National Estate. Whereas, as we pointed out previously, the C.T.R.C. Report is management oriented the report on the National Estate is functionally oriented in that the blanket concept implied in its title includes several of the functions included by us within Multiple Land Usage. To the extent that it is examining the native forest component of our National Estate, this report is approaching much the same problem as the sections of the C.T.R.C. Report cited previously, only from a different perspective. Hence it is not surprising that it too found that its aims are not consistent with the impending wood-chip industry. (see Chapter 2)

That two government based reports relating to the impending Manjimup wood-chip industry are mutually exclusive with it under the terms of the present Agreement supports our contentions that no adequate consideration of the physical and biological impact of the industry and its consequences for the social environment has been made. The responsibility for this must rest with the cavalier decision making of successive Western Australian Governments and the unquestioning acceptance of their assessment by the Australian Government in granting an export license in 1973. However the industry has not yet begun and the opportunity rests with the Australian Senate Standing Committee on the Social Environment to take steps as outlined by us in Chapter 4 of this submission to avert this vandalism. We argue that this is mandatory for anybody with the responsibility for making recommendations relating to the social environment of the Western Australian community.

The social environmental premises upon which the proponents of the wood-chip industry base their assertions are seldom made explicit. One example taken from the Environmental Impact Statement is:

> *"Production forestry is an important part of the State economy and the logical land use in the State Forest reserved by previous populations for this purpose".*[17]

This is a totally absurd proposition. The Forests Department was created in 1919 pursuant to the Forests Act 1918 which made provision for the dedication of State Forest for the purposes indicated in the quote. In the half century which has followed, technology, and therefore the need for timber, and societies' needs and values in relation to the non-wood production values of forests, have altered greatly. Secondly, the overall structure of the Western Australian economy has also altered markedly, particularly since World War II and the relative importance of production forestry as an export income earner and as provider of employment has declined. In the most recent Annual Report of the Forest Department the number of persons employed in production forestry was 3,900, hardly an important part of the economy of a state with a population of over 1 million.

It is not surprising that the W.A. Forests Department should hold the type of values implicit in the quote cited previously. The Department's terms of reference under its act are to service the production forestry industry and it is substantially financially dependent on royalties from this source. Historically speaking the Forests Department has played an admirable role in reversing the earlier destructive patterns of production forestry and conserving the forest in some sense at least for long term utilisation, at very little monetary cost to the public.[18] It is however anachronistic in the present context because production forestry, within which profit maxamisation has necessitated a move towards intensive production forestry, is incompatible with present and future community needs in relation to the non-wood production values of forests.

We submit that a complete and independent review of forestry priorities in W.A. is needed in the light of present community needs and current resource availability. The W.A. Forests Department is not the appropriate body to conduct such a review because of its historically and structurally determined commitment to production forestry and more recently to intensive forestry, as evidenced by the woodchip industry Environmental Impact Statement. The Department has always seen the management of the non-wood production values of native forests as incidental to its principal function of serving production forestry.

We are particularly concerned that the social environmental premises of the

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17. Environmental Impact Statement: Page 9

18. *A History of the Timber Industry of W.A.:* B.A. Honours Thesis, University of W.A. 1956. Page 54.

Environmental Impact Statement are framed in such a way that they are assumed to be objective. However a proposition of the form that a given resource should be used for purpose X (and therefore not for purposes Y and Z) is a valuative one and is no more the special preserve of the professional forester or the private business interest than any other member of the community. The technical expertise of the forester (and many other biological and physical scientists and technologists) is essential if informed value judgements relating to forest resource allocation are to be made. Many inputs of opinion and empirical material will be required if a goal of maximum community benefit is to be the aim.

The orientation of the Forests Department toward production forestry and now the logical extension of this, intensive forestry, has been variously described as an ideology and an ethos. These are both appropriate terms as the set of beliefs are coherent (i.e. mutually reinforcing), valuative and function to motivate and rationalise a set of practises. The ideology or ethos is unanimously found within the various State forest services and the private industrial interests. This twofold identification of interest is reflected in the Forwood Conference when the State forest services (including the W.A. Forests Department) and the private industrial interests, met to plan the future of Australian forests in Canberra in 1974. The premises of this conference, although plagiarising the term Multiple Usage, so clearly accepted the ideology of production forestry that as responsible a body as the Australian Conservation Foundation, concerned with some of the non wood production values of forests, felt it could not participate without compromising itself.[19]

The urgency of the need for a review of forestry priorities using Multiple Usage criteria and the immediate application of this concept to modify the impending Manjimup wood-chip project is clearly evident. As will be explained subsequently we are not opposed to wood chipping *per se* but can accept it only insofar as the scale and intensity of operation is consistent with Multiple Usage, which the impending industry under the terms of the 1973 Agreement clearly is not. Multiple Usage is consistent with the public interest in relation to the allocation of very scarce resources and accordingly considerations of business profitability should be incidental to this. As we will enlarge upon in chapter 3 of this submission the evidence indicates that the decision making so far is the reverse of this i.e. business profitability has prevailed over the public interest.

This submission is principally concerned with the impact of the impending Manjimup wood-chip project in Australia, primarily within the Western Australian community. There are however wider aspects, namely the impacts of the pulp and paper producing industries, of which this project is an integral part, on human society. As the products of this project are at present wholly for export these wider impacts will be primarily felt outside Australia, although to ignore them would be particularly myopic.

The wood-chips will be exported to Japan, to the Marubeni Corporation, where they will be manufactured into paper products. The paper manufacturing industry uses vast amounts of potable water and causes a great deal of pollution. Under the terms of the 1973 Agreement, the W.A. Chip and Pulp Co. is required to investigate the feasibility of establishing a pulp project in W.A., but we have been informed this is not viable in the near future. One of the ironies of the project is that, due to the possible depletion it may cause to streams in the licence area, it may well preclude a pulping project.

A large proportion of the products of the paper manufacturing industry are squandered for socially useless and damaging purposes. Vast amounts are used for unnecessary packaging. The Australian Conservation Foundation estimated that Australians expend $700 a year on what is generally promotional packaging which contributes nothing to the usefulness of the product to the consumer. Similarly, vast amounts of paper are used for advertising which has very little useful information, a lot of misleading nonsense and contributes to the cost of a product without adding to its usefulness.

The net effect of these products of the paper manufacturing industry, packaging-promotion and advertising is inflationary because of the enormous addition to the cost of the products being contained and/or promoted. To complete this anti-social cycle they are mostly used once and thrown away, thereby contributing to the litter problem which costs us $100 million per annum to dispose of, and greatly

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19. *Australian Conservation Foundation Newsletter:* Vol. 6, No. 2, March 1974.

degrades our environment. It is an interesting reflection of the intensive forestry industry's perception of its own interest that the Forwood Conference in calculating future community "needs" for its products assumed that paper and cardboard consumption would more than double per capita by 2010. We would submit that the community's needs for the aesthetic, recreational, education and scientific functions of native forests will increase, and that we would do well to consume less of the inflationary junk which seems to necessitate their destruction.

MULTIPLE USAGE OF OUR SCARCE FOREST RESOURCE

The concept of Multiple Resource (or Land) Use has been variously defined. It is, in fact, difficult to arrive at a definition which is consistent, and not susceptible to manipulative interpretation. In respect of forests, the term is particularly open to distortion.

Section 531 (2) of the U.S. Multiple-Use Sustained Yield Act 1960 defines Multiple Use thus:

"The management of all the various renewable surface resources of the national forests so that they are utilised in the combination that will best meet the needs of the American people; making the most judicious use of the land for some or all of these resources or related services over areas large enough to provide sufficient latitude for periodic adjustments in use to conform to changing needs and conditions; that some land will be used for less than all of the resources; and harmonious and co-ordinated management of the various resources, each with the other, without impairment of the productivity of the land, with consideration being given to the relative values of the various resources, and not necessarily the combination of uses that will give the greatest dollar return or the greatest unit output".

Whilst this definition is far from perfect, it does emphasise the necessity for consideration to be given to a variety of simultaneous resource uses for any land, particularly public forest, before it is committed to any sole and exclusive use.

Multiple Resource Use, or the simultaneous use of a given area for several different purposes, provides a technique for overcoming conflicts which arise over allocation of resources (land) between conflicting, often incompatible uses, to provide maximum long-term benefit for society[1]. Maximum benefits from all uses simultaneously are physical and biological impossibilities, so a decision must be made in each instance as to which, if any, are to be given priority. This decision must be based on value judgements in the light of adequate scientific and sociological research. The ultimate decision as to what particular mix of purposes will, at any time, be the aim can only be ascertained through the process of responsible government – and this can only function when all information based on research is freely available. Public participation in decision-making enhances the probability of a socially desirable result.[2] Subsequent implementation of a combination of the different uses must increase the total benefits to both present and future generations.

Because of the scarcity of the resource, and the large number of conflicts which arise, multiple use should be the objective in high rainfall forest areas[3]. This should apply especially in Western Australia, where the high rainfall area constitutes such a small proportion of the State.

The potential uses for the forest areas of W.A. may be listed:

1. National Estate
2. Water catchment
3. Tourism and Recreation
4. Local Forest Industries
5. Scientific & Educational Study
6. Timber Production
7. Agriculture
8. Mining

In addition to these obvious physical uses, there should also be considered the less

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1 C.S.I.R.O. (1974). Report of the Working Committee on Rural Land Use.

2 Garbesi, G.C. (1975). Public Participation in Environmental Planning – A Legal Approach.
Proceedings of a Seminar 'The Peel-Preston Lakelands'. Policy, Planning and Public Opinion pp. 39-46. Uni. of W.A. Extension Service.

3 C.S.I.R.O. (1974). Report of the Working Committee on Rural Land Use.

tangible and aesthetic benefits that can contribute to human well-being – i.e. 'nexus with nature'. Consideration of these benefits is included in discussion of National Estate (see later). We are sure that the further research which must be undertaken will reveal additional potential uses of the forests.

We submit that the forests of Western Australia, as a public resource, should be managed on a multiple use basis. That is, these forests could (and should) provide all the benefits of the uses 1-5, and some benefits from use 6 simultaneously, as each of these is compatible with the Multiple Use Concept. The public should be given the opportunity to decide the future of the forests before the options are limited by any intensive land use programme.

The proposed woodchip industry is not compatible with this Multiple Use Concept (any more than Mining or Agriculture) as it involves only the exclusive use of the forests for intensive wood production (maximum utilization of any one resource, as stated earlier, is not compatible with multiple use). The Forests Department's policy seems to have been, and to still be, to consider the forests primarily as a source of timber, which would mean that other potential uses of these forests have only been tolerated to the degree that they do not affect timber production[4]. The present Wood Chipping Industry Agreement seems to be an extension of this policy, directed towards a single intensive use, which will in effect, hinder and detract from the development of any other potential uses of the forests.

The Forests Department's objectives regarding the Woodchip proposal, as stated in the Environmental Impact Statement are:

1. *"To increase the productivity of the southern forests.*
2. *To realise on a wood source which hitherto has only potential commercial value, but whose presence has silvicultural disadvantages.*
3. *To initiate development in the field of waste wood utilization, without which a fully integrated wood-processing industry is impossible".*

We submit that the Forests Department, in managing a public resource (viz. the forests of W.A.) should have properly taken account of all other potential forest uses (including flora conservation, for which it is responsible). We shall show that each of these other uses (1-5 from above) has considerably more importance than presently recognised by the Forests Department (as stated in their Environmental Impact Statement). Furthermore, these other uses can exist simultaneously as multiple uses, contributing more benefit to society than a single use.

We shall also describe the way in which the Woodchip Industry could effectively detract from the alternative land uses by virtue of attendant environmental change.

The First Major Resources Allocation Conflict

Under the terms of the Wood Chipping Industry Agreement Act, 1969, as amended in 1973, the State is obliged to supply 680,720 tonnes green weight of timber for chipping per annum to the W.A. Chip and Pulp Co. Pty. Ltd. for 15 years. This quota is considered by the Forests Department to provide a maximum managable rate of exploitation, any increase in rate being considered undesirable[5]

Condition 9 of the Schedule of the Amended Agreement empowers the Conservator of Forests to excise areas from the woodchip license area, without direct penalty, for "roads, railways, stream protection, wildlife maintenance, protection of scenic attraction, or any other works of public utility, amenity, or convenience".

As detailed in Chapter 1 of this Submission (page 1.5) the Environmental Protection

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4 Forestry in Western Australia, W.A. Forests Department Bulletin Series p. 153.

5 W.A. Forests Department (1974). Marri, Woodchip Project Environmental Impact Statement, pp, 2,32.

Authority has drawn attention to the mutual irreconcilability to these two commitments[6].

Since the E.P.A. Interim Report (August 1973) three expert committees have examined the impact of woodchipping on the environment and published recommendations.

The Report of the National Estate (1974) recommends:

> *'that woodchipping operations or other operations involving clear-felling of large areas be discontinued until the environmental effects are better known and properly assessed'.*

The Report of the Conservation through Reserves Committee to the E.P.A. (1974) recommends:

1. *That during the first license period of the Wood Chipping Industry Agreement Act, 1969-73, clear-felling should not be carried out in an area designated near the Shannon River Drainage Basin;*
2. *that precise boundaries of the area to be set aside as the Shannon River Drainage Basin be determined by the Environmental Protection Authority in consultation with the Conservator of Forests;*
3. *that all Crown land within the designated boundaries which is not at present incorporated in State Forests should be immediately reserved;*
4. *that, towards the end of the first license period when the effects of clear-felling in other areas can be assessed, a committee select, from within the Shannon River Drainage Basin, a substantial area of wet sclerophyll forest to be conserved in perpetuity as natural forest; the Environmental Protection Authority, the Conservator of Forests, the Western Australian Wildlife Authority, and the National Parks Board of Western Australia should be represented on this committee;*
5. *that the Conservator of Forests be asked to manage the area selected for conservation as though it were a National Park;*
6. *that during the first license period of the Wood Chipping Agreement, the Environmental Protection Authority collaborate with the Forests Department in initiating a project to study in detail, and over a prolonged period, any aspects of the biology, hydrology, sedimentology, pedology and geology of the Shannon River Drainage Basin (including Broke Inlet) that appear relevant to assessment of the environmental effects of the woodchip industry and to the conservation of the wet sclerophyll forest.*

The Report on the Australia Woodchip Industry (1975) prepared by a joint working group from the Australian Department for Conservation and the Australian Department for Primary Industry includes the following recommendations:

A1 *As a matter of urgency, research priorities be decided for an expanded programme of research to identify and determine the effects of intensive forest operations on the forest environment and other non-wood uses and such a program be implemented without delay. This research should, wherever appropriate, be undertaken on a multi-disciplinary basis.*

B1 *In view of the large degree of uncertainty surrounding the environmental impacts of the woodchip industry, the feasibility of implementing alternative strategies or variations to existing strategies for the management of woodchip areas be investigated further. Such studies should commence as soon as possible and should be subject to review as more data on the environmental impacts of the industry become available.*

B3 *All woodchip concession areas should be periodically reviewed by the State*

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6 Environmental Protection Authority, Interim Report – Woodchip Industry – Manjimup. Report to the Minister for Environmental Protection 24th August, 1973.

Forest services to determine the suitability, the extent, and the location of portions of native forests which could be designated as areas to be temporarily or permanently reserved from cutting. In designating reserved areas there is a need to recognise and make allowance for the current export approvals for woodchips. The selection of such reserved areas should be on the basis of ecologically significant entities such as water catchments, vegetation or soil types. Priorities should be given to those areas where the potential gains from environmental protection are judged to be the greatest. In carrying out this review the State Forest services should consult other agencies where appropriate.

C1 The woodchip industry be subject to continuous assessment of its monetary and non-monetary impacts on society. It is recognised that some of the research and investigation programs recommended above may take some years to complete. Hence certain interim measures to allow for the uncertainty of environmental impacts may be required in the intervening period. Where such measures are appropriate, they should be implemented in the woodchip areas as soon as possible.

This report, commenting on the environmental uncertainties associated with woodchipping, suggested two alternative strategies of forest usage to allow for these uncertainties:

(a) the reservation of regenerated forests from subsequent cutting; and

(b) the increase in the areas of existing forest within the concessions to be reserved from cutting.

In view of recommendation C1 above, the second of these strategies is the only one which appears acceptable.

The Shannon River Drainage Basin, chosen as an ecologically significant entity by the Conservation Through Reserves Committee, should be reserved, at least temporarily (15 years), as a measure to allow for environmental uncertainty. Excision of this area from the woodchip license area would enhance the Multiple Use potential of the forests. It would, however, conflict with the present State quota obligations as pointed out by the Environmental Protection Authority[7]. The conflict must be resolved by a renegotiation of the Wood Chipping Industry Agreement to provide for a lower annual quota.

The Shannon River Drainage Basin Proposal

The Conservation Through Reserves Committee was established early in 1972 by the Environmental Protection Authority to provide a mechanism to 'consider and initiate the means of enhancing the quality of the environment[8] through the establishment of an adequate series of conservation reserves. The Committee established two main guidelines[9]:

(a) to recommend adequate reserves to secure conservation of representative biological and geomorphic types occurring in Western Australia, as well as of other features of special scientific significance.

(b) to recommend adequate areas of National Parks (additional to those in (a) above, where necessary), to meet projected population growth, distribution and mobility.

With these guidelines, and with the assistance of an expert technical sub-committee also consisting of senior civil servants and academics, the Committee set about to review existing conservation areas and to initiate the establishment of further reserves. Each ecosystem type was examined in detail to ascertain the adequacy of its present conservation status. Those ecosystems considered inadequately conserved were examined

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7 Environmental Protection Authority, Interim Report – Woodchip Industry – Manjimup. Report to the Minister for Environmental Protection 24th August, 1973.

8 Environmental Protection Act (1971) Section 29(2).

9 Report of the Conservation Through Reserves Committee to the Environmental Protection Authority, 1974, p.0.9

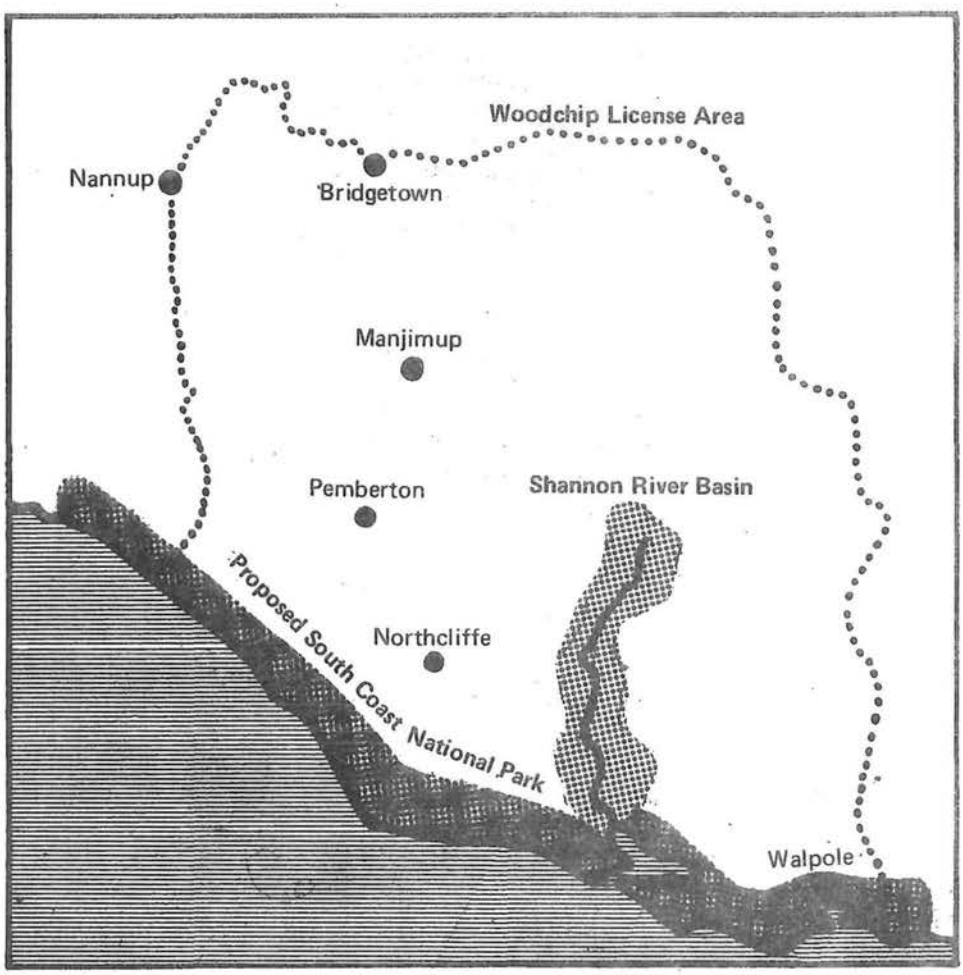

Diagram showing the Shannon River Basin in relation to the woodchip license area.

further, and recommendations made for the conservation of specific areas.

One such ecosystem type examined was the Karri (*Eucalyptus diversicolor*) forest of the south-west of Western Australia. The Karri forest was considered inadequately conserved[10] and in imminent danger of almost total destruction as a natural entity by woodchipping. Accordingly, and in view of the many environmental uncertainties associated with the woodchipping activity, the Committee expressed the belief that, at least for the first license period of 15 years, cutting should be excluded from a relatively large single continuous area. This would provide a 'scientific control' for monitoring other parts of the license area, and a potential permanent reserve of substantially 'natural' Karri, and Karri-Marri forest,

As an obvious natural unit for the initial interim reservation, a drainage basin of a river system was chosen. Of those suitable for conservation, the Shannon River was considered best suited. Furthermore, the Shannon River flows into the Broke Inlet (recommended for reservation under a separate proposal), so reservation of the Shannon River Drainage Basin would enhance the long-term viability of Broke Inlet.

The Conservation through Reserves Committee also noted that:

> *"a major reserve in the wet sclerophyll forest area of Western Australia would, in time, become a national and international tourist asset, with greater earning potential than it has timber resources. With competent management this recreational potential is also reconcilable with conservation of the forest for biological purposes"*[11]

The total area of the Shannon Drainage Basin is approximately 50,000 ha. In the Australian context, a forest park of this area may sound large; by comparison with the size of parks established for similar purposes elsewhere in the world it is not. The following table and the diagram in Chapter 1 (see page 1.2) show the relative sizes of selected forest parks elsewhere in the world.

National Park	Country	Area (ha)
Great Smoky	USA (Tennessee-Carolinas)	209,067
Olympic	USA (Washington)	363,123
Isle Royale	USA (Michigan)	218,433
Soretama	Brazil	29,970
Rio Pilcomayo	Argentina	283,500
Iguazo	Argentina	55,080
Mudus	Sweden	49,000
Borgefjell	Norway	100,051
Khekhtsir	U.S.S.R.	45,206

* CTRC Report

The Campaign to Save Native Forests endorses the recommendations of the Conservation Through Reserves Committee as being necessary but not sufficient for the implementation of multiple usage in the native forests of Western Australia.

10 See also Specht, R.L., Roe E.M. and Boughton V.H. (1974) (eds). Conservation of Major Plant Communities in Australia and Papua New Guinea. Aust. J. Botany, Supplementary Series 7.

11 Report of the Conservation Through Reserves Committee to the Environmental Protection Authority, (1974), p.2.24

The National Estate

As outlined in the Report of the National Estate (1974), and succinctly described as 'the things that you keep', the National Estate includes:

(a) The natural environment:

National parks, nature reserves and other places for the protection of wildlife, both plants and animals.

The coastline and islands.

Inland water expenses, rivers, lakes and other wetlands in addition to those to be designated as national parks and nature reserves.

Landscape or scenic areas not otherwise included in the above categories.

Lands which may provide extra-urban recreation resources for present and future urban populations.

(b) The man-made or cultural environment:

Buildings and structures, by themselves or in groups, and urban conservation areas, which should be conserved for historical, architectural, social or other reasons.

Urban parks, including botanical gardens, and other urban areas for the purpose of recreation and amenity or for the enhancement of the urban landscape.

(c) Archaeological or scientific areas:

Areas of archaeological interest including Aboriginal sites and historic sites and relics.

Areas of special scientific interest, including caves and other geological formations.

(d) Cultural property:

Museum collections.

Industrial artifacts.

Archives.

Aboriginal artifacts.

These components are considered to be part of the National Estate because they are:

(a) *of such outstanding world significance that they need to be conserved, managed and presented as part of the heritage of the world.*

(b) *of such outstanding national value that they need to be conserved, managed and presented as part of the heritage of the nation as a whole.*

(c) *of such aesthetic, historical, scientific, social, cultural, ecological or other special value to the nation or any part of it, including a region or locality, that they should be conserved, managed and presented for the benefit of the community as a whole".*[12]

At a time when Australians, and indeed people from all over the world, are coming to recognize the value of preserving elements of the National Estate[13], a decision has been made to permanently destroy a large and precious section of that Estate. This permanent loss is inevitable under the terms of the present Wood Chipping Industry Agreement. NATIVE FORESTS (AS AN ENTITY) ONCE DESTROYED, CAN NEVER BE RECONSTITUTED. Aesthetically, for example .... *"regenerated stands of Karri between 40 and 100 years old, have undeniable grace. It is, nevertheless, an orderly, rather formal elegance, not the sombre magnificence of uncut forest".*[14]

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12 Report of the National Estate (1974) p. 2.7

13 See the Growth of Conservation bodies relative to population growth. Report of the National Estate p.24.

14 Report of the Conservation Through Reserves Committee to the Environmental Protection Authority (1974) p.2.22

The importance of preserving the National Estate lies mostly in the cultural enrichment provided by diverse surroundings. Natural physical surroundings contribute to the range of human experience on which a culture is founded. They provide immediate inspiration as well as, with time, becoming part of a tradition. Judith Wright describes it thus:

"This task of the interpretation of Australian life and landscape will never be quite complete, since of course both life and its surroundings are changing all the time. But we now know much more of ourselves and our country than we did; we are at least mature enough to speak with a certain amount of self-knowledge. We have a tradition of our own, brief though it is; we have a strange and beautiful country of our own, and though we are far as yet from taking a proper pride in it and in its flowers, trees and animals -- which we should protect because we are part of the country as it is of us -- still we are beginning more and more to understand this responsibility towards Australia".[15]

The forest ecosystems of the Southwest are unique, and form a vital part of the National Estate. Preservation of this National Estate is not compatible with the present woodchip proposal. Embodied in these forests is a spirit of survival under harsh conditions, which has become incorporated into our traditions as the pioneering spirit. These forests represent a contact point with pre-European nature, provoking in people a sense of belonging to the Earth, history and awe. The contact with nature is not only actively enjoyed; many people maintain their contact passively through films, books, etc.

There is also great biological importance in conserving samples of the natural environment. As Specht, Roe and Boughton (1974), 'The Conservation of Major Plant Communities in Australia and Papua New Guinea' states, it has now become part of conventional wisdom that ecosystems must be preserved for present and future use and study. Conservation enables maintenance of diversity of 'gene pools' of species which are of importance to science and are, or may become, of economic importance to man. The future needs for biological control of pest species can only be satisfied through conservation. Of those species which may not directly and obviously aid man's survival, their presence in complex and dynamic ecosystems in which evolution and chance are continually taking place, is aiding man's survival through providing the diversity and balancing influence in food webs, etc. As Frankel (1970)[16] concludes "We have acquired evolutionary responsibility".

Acceptance of this responsibility implies we must conserve adequate viable samples of all major ecosystems. The International Union for the Conservation of Nature and Natural Resources recommends a minimum area of 5% of countries to be set aside for conservation. Conservation is considered adequate when 10% of the area is set aside for that purpose. More recently it has been recognized that conservation areas should include this proportion of each major ecosystem type.

Specht *et al* (1974) classifies plant communities according to structural characteristics and dominant plant species, and shows the present conservation status of each community. Thirteen communities are listed dominated by Karri, Jarrah or Marri. Of these, only one category is considered reasonably conserved.

The Conservation through Reserves Committee has reviewed the conservation needs of Western Australia and recommends at least temporary reservation of the Shannon River Drainage Basin. The implementation of this proposal could result in the conservation of many of these 13 Karri-Jarrah-Marri combinations, as well as the adequate conservation of an estuarine ecosystem (Broke Inlet -- also an important piece of National Estate).

State forests are not considered an adequate substitute for conservation reserves because of the changes which occur in them through roads, logging, and control burning (for timber management). Conservation reserves need different management plan concepts and preferably a different management authority.

Natural conservation areas are, in fact, living museums.

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15. In Introduction "New Land, New Language" Oxford Univ. Press. Melb. 1957.

16 Frankel, O.H. (1970). Variation -- the essence of life. Proc. Linn. Soc. N.S.W. 95: 158-169.

Water Catchment Potable water is the most valuable natural resource in arid Western Australia. Demand is increasing rapidly both domestically [17] and agriculturally.[18] and demand for industrial supplies may increase dramatically in the near future. The establishment of a pulp mill near Manjimup (the Wood-chipping Industry Agreement) will place heavy demands on the supplies of potable water in the South-west.

Supplies of water in the South West are presently drawn from rivers and from underground. Both these sources are at best finite; many rivers are becoming increasingly saline and unusable. The last remaining major unexploited resource in the Southwest is a series of rivers. The rivers are the Denmark, Kent, Shannon, Gardner, Warren and the Donnelly. If dammed they could supply 680,000 acre ft. of water per year[19]. However, the future of this resource is jeopardised by the planned Wood Chipping Industry. Of these rivers, only the Denmark and the Kent have their catchments outside the license area.

Whilst a degree of uncertainty exists as to the effects of the woodchip clear-felling on water quality, evidence we have assembled (see Appendix 3) suggests that the quality may decline through:

(a) increasing turbidity following erosion on cleared slopes and general stream sedimentation changes.

(b) increasing levels of nutrients in the water following leaching and runoff after clear-felling. This nutrient enrichment may give rise to algae blooms and general eutrophication in the waterbodies. Algae and organic detritus will increase the Biochemical Oxygen Demand.

(c) possible increases in salinity levels in streams following disturbance of hydrological balance.

(d) possible presence of herbicide residues in streams following poisoning of trees.

Pulp production at the planned Pulp Mill will exacerbate any decline in water quality while increasing the demand for potable water.[20]

In the Darling Ranges, just east of Perth, forests maintained primarily for their water catchment value can simultaneously fulfil multiple uses. These northern forests provide most of the uses 1-6(from page 2.1)though to some extent recreation and timber production are limited. In the forests of the Southwest, any decline in water quality following woodchipping may permanently impair the water catchment value of the area, as well as detracting from the recreational, aesthetic and conservation values.

Tourism & Recreation The forest area of the South-west comprises —

> **"one of the most important tourist and recreation centres in W.A."[21]**

Yet quantitative estimates of the importance of this land use and of its compatibility with intensive production forestry are virtually non-existant. The absence of such assessment

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17 Demand for water from the Perth Metropolitan Supply is expected to treble over the next 20 years (Ecos. 4, May 1975, p.3).
The Rivers of the Woodchip area may be required for urban water supply as soon as 15 years (Report on some aspects of the environmental effects of Woodchip fellings in South Western Australia. Compiled by a Working Group of the C.S.I.R.O. Division of Land Resources Management 1975).

18 Water requirements for irrigation in the Manjimup Shire are increasing (W.A. Department of Agriculture Technical Bulletin 27, December 1974).

19 Public Works Department (W.A.) (1973) Water Supplies and Irrigation.

20 e.g. See Wilber, C.G. (1969). The Biological Aspects of Water Pollution. Charles C. Thomas Springfield, U.S.A. Chapter 8.

21 W.A. Forests Department (1974). Marri Woodchip Project Environmental Impact Statement p.15.

prior to acceptance of the woodchip industry highlights the inadequacies in the Forests Department's Environmental Impact Statement and in the decision-making process.

We submit that tourism and recreation, as a land use in the forests, has been seriously underrated. This land use can and will generate more employment (including decentralised employment) and more regional income than the timber production industry. Furthermore the probable incompatibility of the planned woodchip industry with the use of the forests for tourism and recreation must be recognised before a proper decision on priorities for land use can be reached.

The Forests Department, in their E.I.S., has attempted to justify the wood-chip industry on economic grounds. However, there is substantial evidence that the income from tourism and recreation can in the long term be more beneficial to the community both economically and in maintaining the general well being of the both present and future communities:

". . . in the long term a natural park which attracts a comparatively small number of visitors per day may provide much more continuing employment to a district than a short term project which provides work for a relatively large number of people but may leave behind it an unattractive or polluted area which people avoid".[22]

In West Virginia (USA), scarcely a major tourist State, tourism and recreation earn $10 for every $1 earned by forest industries, and in the Mt. Macedon forest area, near Melbourne, tourism earns more than $14 for every $1 earned as timber value.[23]

The Conservation Through Reserves Committee also drew attention to the increasing importance of tourism and recreation in the forests of W.A. over the timber industry (see page 2.6)

A submission to the Inquiry into the National Estate from H.R.H. Prince Bernhard of the Netherlands, further emphasises the enormous economic importance of tourism in natural areas:

"Who would have dreamed 30 years ago that Kenya's system of National Parks would attract tourism which is now the nation's chief earner of foreign exchange, or would be the centre of the nation's pride and culture?"[24]

The limited information which is available on tourism and recreation in Western Australia suggests that forest usage is already of considerable importance both economically, and in terms of employment.

Recently, the W.A. Minister for Tourism (also the Minister for Forests) stated that tourism in W.A. would be worth $2m per week, or over $100m per year by the end of 1975[25]. Much of this is spent in the South-west region (Mandurah to Albany) which is often referred to as "the forest belt". In 1973 the Australian Travel Research Conference found that about 45% of all trips in W.A. were to/in/through the South-west and that this amounted to over 1.25 million trips. Furthermore, these trips to the South-west were generally of longer duration (e.g. main holidays) as about 30% of remaining trips were in/to/through Perth and environs[26]. Consequently at least half of this $100m p.a. could be expected to be earned in the South-west.

About 5% of the region's workforce is engaged directly in the tourist industry – hotels, cafes and amusements etc.[27]. Of these up to 75% may be women[28], who are normally a

22 Report of the National Estate (1974)

23 Routley, R. & V. (1974). The Fight for the Forests (Ed. 2) A.N.U. Press, Canberra.

24 Report of the National Estate (1974) 3.173

25 The Sunday Times 3/8/'75.

26 Australian Travel Research Conference (1973). Survey of Australian Tourism 1973-74.

27 from A.N.T.A. (1973) Developing Tourism in the S.W. Region; an Industry Appraisal

28 W.A. Department of Development & Decentralization. Albany Accommodation & Employment Survey.

largely unemployed sector of the workforce in country towns. In addition, many men and women are employed in the tourist transport industry. Thus the combined employment potential in tourism (and recreation) can be expected to exceed that in forest industries of the South-west, especially when it is recalled that the present level of employment in the timber milling industry is sustained through over-exploitation of the forests (see page 2.14)[29] Furthermore, the tourist industry does not require heavy capitalisation (as does the timber industry) and this is conducive to small scale (family) business whose profits tend to stay in the region longer and enhance the processes of decentralisation.

Of course, treatment of these two industries in isolation of each from the other and from the matrix, is both unreasonable and impossible. Towns like Manjimup and Pemberton could not exist at their present level on either tourism or the timber industry, as, for example, the tourist service industries depend to some extent on the patronage of the permanent population for their existence.

However, present trends suggest that tourism and recreation will increasingly dominate the local economies, while the timber industry will decline in importance.

Largely as a result of the increased leisure time and mobility in our society, there is a rapid rise in the nature and content of leisure pursuits, which has been without paralell[30]. Consequently, the demands on the forests for tourism and recreation can be expected to increase dramatically in the future.

In the 15 years between 1945 and 1960, the population of the United States increased 30% and the real Gross National Product 37%. During the same time, industrial timber production increased 36%; recreational use of the National Forests during this time increased an incredible 900%.[31]

"Five years ago Mr. T. Fox, of the National Parks and Wildlife Service of N.S.W., contributed a paper to the Fourth Ministerial Conference on National Parks held in Melbourne. The paper was in part based on a questionnaire on park usage carried out by the NPWS. Fox concluded that since the increasing usage of national parks as recreation outlets was far outstripping the rate of population growth, many of Australia's near-city national parks would be grossly over-used as time went on and would lose their value accordingly".[32]

He calculated the time it would take for such a situation to arrive for each city in Australia. For example, the time before maximum capacity for parks within 100 miles of Sydney would be reached was calculated to be 7½ years. Estimates for Perth are not available (the report was confidential). It seems likely, however, that a similar trend could exist for the forests of Western Australia. Recently, the Forests Department have suggested that demand for forest areas for tourism and recreation may increase by between 7-10 times over the next 25 years.[33] This growth in demand for forest parks for recreation and tourism will come during the time of greatest alienation of forest areas through mining and intensive forestry activities.

However, the quantitative approach has its drawbacks in considering the demands of tourism and recreation, for the identification of a non-commodity value of a natural area with the actual use it receives for visiting, picnics, etc. ignores the less tangible and aesthetic uses such an area has. Among these would be the provision of facilities which

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29. It would appear to us that intensive production forestry as manifested in the wood-chip project and the pine planting programme would not be able to sustain even the present rate of employment because the standardisation of logs which this ideology aims at allows greater automation.

30 Report of the National Estate (1974) 1.13

31 Forest Service, U.S. Department of Agriculture, Current Information Report No. 13 (1974)

32 Habitat 3(1) March-April, 1975.

33 Hewett, P.N. (1975). Recreation Characteristics of Western Australian Forests Forest Focus 15.

although not used by some individuals nevertheless has a value to those individuals in providing the opportunity and the choice to experience such unique areas.

The FD have taken some measures to meet the demand for recreation, in particular by the setting up of forest walks and similar amenities in the vicinity of Pemberton. To an extent the FD has been limited in what it has done because of the lack of finance from government:

"For the first time since its inception in 1969, a special Treasury Grant for tourist projects was doubled from $10,000 to $20,000".[34]

This would seem to be a totally inadequate figure for such an important function. However, it must be remembered that catering for tourism and recreation is really beyond the legislative responsibilities of the Forests Department; their central responsibility is to enhance timber production. The introduction of legislation relating to Forest Parks, as recommended by the Conservation Through Reserves Committee (1974) would certainly alleviate this position.

The Forest Department's acceptance of the present woodchip industry highlights the conflict between this legislative responsibility and any responsibility to serve the public interest.

This public interest would be served most adequately by enhancing multiple use values of the forests, which, as stated previously, is not compatible with intensive production forestry. As an example, woodchipping of the forests of the South-west can be expected to considerably depreciate the value of tourism and recreation.

The present Wood Chipping Industry Agreement, and particularly the proposal to clear-fell most parts of the Karri-Marri forest will result in those areas being largely unsuitable for tourism and recreation, particularly for bushwalkers, campers, fishermen, and nature enthusiasts. The general loss of national estate values, loss of aesthetic appeal, and general environmental deterioration, as documented inAppendix 2 (particularly in streams and estuaries)will ensure this.

Local Forest Industries

At least two local forest industries depend largely on the continuing existence of forests as they now exist. These industries, beekeeping and wildflower collecting, make a substantial contribution to the local economy. The honey industry of W.A. exported $1.28 million worth of honey in 1973-74 and this amounted to about 49% of total production[35].

Marri blooms profusely each year during the summer months, and provides a copius supply of nectar for apiculture. Karri honey is widely recognised as the best honey produced in the State. Main flows occur about every four or five years, producing averages of over 250kg of high quality honey per hive. In total the Karri forests contribute about 25% of all the table honey produced in Western Australia . Destruction of the Karri-Marri forests and the removal of the Marri component of the Jarrah forests for wood-chipping will not only reduce honey production directly, it will further reduce production by disrupting the pattern of seasonal activity. The impact of woodchipping on the honey industry will be a lasting one, as Karri trees only begin to flower when about 15 years old,[36] and most profuse flowering occurs when they are much older.

Local beekeepers maintain that Karri regrowth needs to be at least 41-45 years old before flows reach pre-existing levels.

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34 Forests Department W.A. Annual Report 1974

35 Data from Australian Bureau of Statistics

36 Gardner, C.A. (1952) Trees of Western Australia. Karri and Jarrah. J. Agric. W.A. 1(1) : 3-7.

Experiments in the U.S. have determined that a given area of forest will in fifty years return as much in honey as it will in timber production[37] and it is believed that similar figures would hold in W.A. That the wood-chip project will deleteriously effect the honey industry is obvious; yet no mention of this was made in the E.I.S.

In addition to about 30 licensed wildflower pickers operating in the Southwest, there are many seed collectors working for the Forests Department and Plant Nurseries who depend, to some extent, on the existence of forest ecosystems. Annual export of flowers, foliage and seeds is valued at $100,000, and the market is expanding rapidly. Interstate and local wildflower trade may be worth several million dollars per year. The clear-felling of the forests with associated activities (burning, spread of *Phytophthora* etc.) will significantly affect this industry.

Potential for the development of other forest industries exists:

"Many plants, especially in Australia, have not yet been studied for their possible uses and benefits to man. New chemical substances of value to medicine, for instance, are still being discovered in plants".[38]

The recent announcement of the discovery of plants containing the contraceptive drug SOLADINE in W.A. emphasises this point. The source of the drug, *Solanum* spp., will provide a substitute for imports on which there is presently a 46,000% mark up[39]

It is safe to assume that more applications of native plants to society will be found. However, we are not even sure of the present status of all plant species in the forests let alone how they will be affected by the disruptive activities associated with intensive production forestry.

Scientific & Educational Study

National forest areas are a great educational resource. They are recognized as such by many education authorities in their use for tours, camps, hikes, etc. Their educational value is that students can relate what they have been taught or have read to the actual physical environment. This would be the case in *inter alia*, biology, geography, and history. Naturalist organizations also utilize the forests extensively as learning areas.

Forests are also used by Community Organisations (e.g. Scouts, Guides, Youth Clubs, etc.) as areas to promote independence and basic survival skills, which can only be learned in a relatively undisturbed environment. As urban population increases, so the need for these resources will increase in as much as more of the population will be alienated from the countryside. The need for activities described above, and sufficient natural areas to fulfil the requirements, will become increasingly important.

The remaining undisturbed areas of the world are of considerable scientific interest and value. In these remaining areas, of which the forests of the southwest form part, lies our last opportunity to make basic scientific observations of the world before man's technological intrusion. These areas are valuable as monitoring controls by which to gauge the effects of these intrusions on the natural environment, particularly in areas such as climatic change (i.e. interference with climate through extensive land-clearing, large scale mining, urbanization, etc.) pollution and wildlife. Furthermore these undisturbed areas may provide genetic resources for agricultural breeding purposes.

> *"Wilderness, paradoxically, is vital to our civilisation. The ecologist calls for wilderness as an indicator for disturbance of the delicately-balanced life support systems of the world. The biologist sees in it a gene pool, the agricultural scientist a reference point from which to measure his successes and failures".*[40]

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37 From the Submission to this inquiry by the Tasmanian Beekeepers

38 Report of the National Estate (1974) 3:151

39 Daily News 17/7/'75

40 Report of the National Estate (1974) 3.190

Timber Production

Commercial exploitation of Western Australia's timber resources began in the 1830's in a small way, not achieving wide significance until the expansion of the railways in the 1890's. From this point to the establishment of the Western Australian Forests Department in 1918, cutting was virtually uncontrolled and executed with little regard to long-term sustainability of the forest resource and hence to regeneration of cut-over areas.

The establishment of the Forests Department lent a degree of control to forest exploitation which created a favourable reputation of forest conservation for the Department. In those circumstances this reputation was probably justifiable. The 1960's witnessed a rapid acceleration in the Forests Department of a trend towards intensive production techniques. This is but one manifestation of the general tendency towards intensive production which has strongly and often destructively manifested itself throughout the production facet of this society. This tendency, due in part to commercial/Governmental pressure and the ideological inertia common to large organisations such as the Forests Department,[41] has resulted in the destruction of native forests for plantations (with exotic and native trees) and great increase in the scale of logging operations, using techniques which are of dubious value to Multiple Use forestry even when used in small-scale operations. The Marri Wood Chip Project and the recently announced proposal to replace 60,000ha of native forest in the Donnybrook Sunkland with pines[42] provide prominent examples of this process of intensification.

Western Australian forests are being over-exploited. In answer to a question in Parliament on October 17th, 1974, the Minister for Forests supplied the following figures –

	Jarrah	*Karri*
Annual volume of timber cut (m^3)	*657,400*	*273,700*
Annual increment of increase through natural growth (m^3)	*355,400*	*207,000*
Disparity (amount of over-cutting) (m^3)	*302,400*	*66,700*

(Figures relate to logging on Crown Land only)

Consequently Jarrah is being overcut by a factor of approximately 1.85 and Karri by approximately 1.32.

However, it is important to realise that even cutting at the same rate as increment accrues does not mean that the forests are being managed effectively. While possibly providing sustained production of wood, it does not provide for sustained yield of sawlogs. For example, if optimum tree sizes for sawlogs are in the 250-300 year age class (a reasonable assumption since the maximum Diameter at Breast Height of trees in the "100 year forest" at Lefroy Brook is only 28" – a bare minimum size for sawlogs) then only about 0.3-0.4% of the total tree population should be harvested each year. This would sustain recruitment into the sawlog age class. In effect this means that mature Karri should be harvested at the maximum rate of about 400-500 ha per annum. The rate of clear-felling of Karri which will accompany woodchipping is 4000-5000 ha per annum.

That production of sawlogs must decline is an obvious correlate of the over-exploitation. As a clear example of this, the milling activities in the license area should be examined. At present, within the Karri forest of the license area, there is sufficient timber to sustain a rational milling industry indefinitely. However, the intensified exploitation accompanying the woodchip project will exhaust that timber potential within 35.6 years.[43] The license area will then contain trees from 0-35 years old – an age class unsuitable for sawlog production, which will then effectively cease in that region. Therefore, the woodchip project is incompatible even with sustained sawlog production.

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41 Conacher, A.J. (1975). Environment – Industry Conflict. The Manjimup Woodchip Industry Proposal, South-western Australia, Geowest 4. 43pp.

42 The West Australian 31/7/'75

43 Conacher, A.J. (1975). Environment - Industry Conflict. The Manjimup Woodchip Industry Proposal, Southwestern Australia. Geowest 4. 43pp.

The implementation of more rational forest usage would necessitate the rationalisation of forest product usage. As with many other facets of this society's productivity, timber usage and hence forest exploitation is governed by artificial needs – the whims of commerce whereby profitability, usually short-term, is selected to the neglect of long term quality of the human environment, the right of other organisms and natural forms to a continued existence, and even to the neglect of the present real needs of people. An example of this is the use of Jarrah and other native hardwoods for the production of railway sleepers, where concrete is a preferable and economically viable alternative material for this purpose. Sleepers, along with exports, both non-essentials, amounted to 34%, (by volume) of 1973 production.[44] Further reductions, without inconvenience to the public, can be made by rationalisation of other aspects of current usage e.g. in building construction and through reduction of wastage by relaxation of some absurdly high specifications: e.g. telegraph pole cross-trees are currently required to conform to within 1/20th of an inch of specifications.

With present mill technology, only about 30-40% of a sawlog is converted to sawn timber. The sawlog represents about one half of the tree, so that about 80-85% of the standing timber is not utilised, much of it being burnt at the mill and thus wasted. Those parts of the tree left in the forest – stump, branches and leaves – should not, perhaps, be regarded as waste. South-western forests characteristically have a substantial litter component in which part of the nutrient cycle is contained, and which provides a habitat for some fauna species. Marri presents a particular wastage problem due to the presence of a gum-resin Kino which makes selection of sawlogs difficult – although it is profitably milled (the Jardee Mill near Manjimup runs one full shift per day on Marri, and the Forests Department reports Marri sawlog production to have been 18,440 m^3 in 1974).[45] Present plans involve the installation of chippers at some mills – a waste utilisation proposal deserving support, though an environmental and economic study might reveal better ways in which mill waste could be used. Charcoal, gum, resin, turpentine, gas and energy are a few of the possible products of mill waste utilisation. For example, waste could be used to power the mill and associated works, as well as for the manufacture of some of the products listed above.[46] The implementation of such a rational production regime would serve several broad purposes, such as allowing the scaling down of logging activities, as necessitated by years of overcutting, without an attendant retrenchment of workers; aiding the process of decentralisation; and rational resource usage at a time when exhaustion of many of the world's resources (particularly sources of energy) is imminent.

The existence of a chipwood industry within the framework of a rationalised timber industry, utilising mill waste and providing chips for the domestic paper and cardboard market (hopefully also rationalised) is acceptable. The present woodchip project is planned to co-exist with an over-exploitive timber industry and will exacerbate this over-exploitation. The present woodchip quota is apparently much more than that required to fulfil the silvicultural functions claimed by the Forests Department to be the justification for the project, and is apparently also much more than that originally intended by the Department. This subordination of silvicultural considerations to commercial considerations is discussed in Chapter 3 of this submission.

Similarly, the selection of techniques for forest management (in relation to timber production) is governed largely by commercial expediency. Therefore the prescription arrived at during the last decade is for clear-felling (Karri-Marri) and heavy cutting (Jarrah-Marri) in large coupes, followed by a hot burn. The short-term commercial advantages of

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44 Forests Department W.A. Annual Report, 1974.

45 Forests Department W.A. Annual Report, 1974.

46 The report of the Committee on Solar Energy Research in Australia (Australian Academy of Science, 1973), indicated that mill waste and litter left in the forests after logging contained an energy content amounting to about 10% of the total 1973 energy consumption in Australia. Utilisation of all or part of this resource would quite probably lead to a far more integrated and efficient waste utilisation system than pulp production and would give greater economic benefits to the Australian people. At the same time it would reduce the social and environmental costs of both hydrocarbon fuels and excess pulp production. Unfortunately, far too little research has been done into this sphere.

this type of management over strip or patch-cutting (Karri-Marri) and careful selective logging (Jarrah-Marri) are obvious and related largely to scale. Moreover, the clear-felling of Karri-Marri forest and the heavy cutting of Jarrah-Marri forest (or clear-felling, once these forests are reduced to even-aged stands) will be executed in cycles of 90-100 years and 100-150 years respectively. The most rapid tree growth (kg/ha/annum) occurs approximately within the first 100-150 years following germination, so again the many values of native forests are subordinated to the one -- timber production.

Pine planting provides another example. In Australia and Western Australia native forests are being cleared for pine plantations far beyond the requirements for self-sufficiency. The pine planting programme is based on estimates of future demand derived from totally unrealistic predictions of population growth and rates of paper and cardboard consumption[47] Other critics claim that the aim can only be the establishment of a softwoods export industry.

Alternative and less environmentally destructive forestry techniques exist which could be used even within the present forestry programme. Among these techniques are strip and patch-cutting, and generally using smaller coupes;[48] mulching and seeding of roads and better construction and siting of roads; recycling of the nutrient-rich bark; log extraction using cables, high wires and sky balloons;[49] planting of pines on already cleared land (thereby simultaneously alleviating problems of stream salinity), the use of indigenous species for plantations (e.g. the Tasmanian Blue Gum) and the wide spacing of pine rows to allow the development of a native understory. (The Report of the National Estate recommends a moratorium on the planting of Pines at the expense of Native forests).

Much research is needed before a detailed presciption can be given for the management of south-western forests according to the concept of Multiple Usage. For example, research is needed to determine the exact ways in which techniques such as those listed above can be applied to the south-western forests. Unfortunately, very little relevant research has been done and since native forests are a dwindling resource (in terms of both area and ecological viability) we submit that such research should be initiated with the greatest urgency.

Because of the types of decisions that are currently being made about our native forests without recourse to public opinion, we recommend that an independant enquiry with the powers of a Royal Commission, be established to review activities of Forests Departments in Australia in relation to the needs of the Australian people.

Agriculture and Mining

These two possible land uses for the area covered by the wood chip license can only be seen as alternatives to woodchipping. Neither is compatible with the Multiple Use Concept. In view of our desire to see the remaining forests of Western Australia used according to this concept, we submit that neither activity should encroach further on the forests.

The impact woodchipping on the agriculture which is already present in the license area, is likely to be considerable, particularly through deterioration of water quality and spread of pathogens.[50]

Mining leases now cover a considerable proportion of the State forests (see figure 3) but do not impinge on the wood-chip license area. Some of the license area is pegged

47 See Routley, R. & V. (1974). The Fight for the Forests (Ed. 2) A.N.U. Press Canberra, for a discussion of these totally unrealistic trends.

48 See Diamond, P. (1975). Nitrogen cycling and Forest Management. Proc. Ecol. Soc. Aust. 9: 182-191.

49 See Boughton, W.C. (1970). Effects of Land Management on Quantity and Quality of Available Water. Univ. of N.S.W. Water Research Laboratory Report 120.

50 Conacher, A.J. (1975). Environment -- Industry Conflict. The Manjimup Woodchip Industry Proposal, Southwestern Australia. Geowest 4. 43pp.

as claims but licenses are unlikely to be granted.[51]

As an alternative in the license area, mining may be more profitable, though as least as economically costly, but would certainly not gain public approval. The forests must remain forested in the long term public interest.

WOODCHIPPING AND MULTIPLE USAGE

It is apparent from the foregoing that our forests confer many benefits on our society and that timber production is a vastly overrated aspect of these benefits. We submit that this over-emphasis is a result of the power and influence of the timber production lobby; the manifestations of this power are apparent in Western Australia in the over-exploitation of forests, the current nature of the woodchip project, and in the pine planting programme.

The enquiry into softwood plantings set the official seal on the fact that the Australian people were taken for a ride on the question of pines and we are confident that this enquiry will demonstrate that the timber lobby would have it that we be taken for a ride over woodchipping too.

It can readily be established that this is the case in Western Australia by examining some of the justifications for the Marri wood-chip project in the context of multiple usage.

These justifications are:

1. The silvicultural functions of clearfelling.
2. Increased timber production.
3. Reduction in the over-exploitation of forests.
4. Creation of employment.
5. Waste utilisation.

The silvicultural functions of clearfelling in the Karri and Karri-Marri forests are real, but clearfelling is only a necessary and not a sufficient condition for this project. It is our belief that this project was initiated as a silvicultural operation to rehabilitate areas of Karri which have denegenerated through the use of incorrect proceedures in the past; but also that during its development, this project has been manipulated by production forestry interests to the point where these silvicultural intentions have become incidental to the production consideration.

This can be amply demonstrated by the following points:

- We have been informed that originally the Forests Department argued for a much lower annual tonnage commitment. This is borne out in part by the escalation of commitments from 500,000 tons in the 1969 Agreement to 670,000 tons in 1973.
- That there are no silvicultural functions for heavy selection cutting in the Jarrah-Marri forest – this is purely an intensification of activity.
- That clearfelling operations of the size and nature of those outlined in the E.I.S. have come under heavy criticism in the U.S.A. where experience has demonstrated them to be environmental unsound. (more on this in Appendix 2).
- That the regeneration procedures to be utilised will deliberately alter the balance in favour of commercially favoured species – with resultant ecosimplification.

These points make it apparent that this project is being operated on economic, rather than silvicultural principles and the last point makes it clear that the regrowth will not be native forest.

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51 Environmental Protection Authority, Interim Report – Woodchip Industry – Manjimup. Report to the Minister for Environmental Protection 24th August 1973. 2.1 - 2.2

Furthermore, it has been announced that the intention is that the trees will only be retained during their period of peak growth. (90-100 years for Karri, 100-150 years for Jarrah). In theory, maximum utilisation of the forests for timber production will be achieved. In practice, the forest will be a juvenile one lacking in the values we have enunciated on in the earlier parts of this chapter, and also being of inferior value for sawlog production. This means that far greater emphasis will be put on chipping for pulp or for reconstituted boards. To the producer, this is an attractive proposition because greater economies of scale can be introduced if a standardised forest and a standardised intermediate product is being dealt with.

Accordingly, we submit that there will be an overall loss of employment in the long term: not only will forest based non-timber production industries suffer but employment opportunity in the sawmilling industry will decline as mechanisation takes place.

Almost paradoxically, a reduction in the over-exploitation of forests will occur through increased production. This indicates that the concept of exploitation as defined is deficient. In fact it is deficient in two ways:

- It does not take into account the size of the trees – only the rate of removal of cellulose and the rate of increment of cellulose. In theory, you could almost be cutting down the whole forest every year.
- there is no consideration of other forest values: such as National Estate, water catchment, recreation, other forest products, etc.

Consequently, it is a fallacy and a deception to maintain that this project will reduce over-exploitation. Rather it will over-extend this exploitation to the point where the forests will lose their intrinsic nature and consequently most of the benefits they confer on us will be lost.

The defence of this project in terms of waste utilisation is also false. The trees to be used will be cut down expressly for the purpose and since we have demonstrated that these trees hold many other values it is false to label them as waste. On the other hand, this project cannot utilise burnt or bent logs, therefore it will not clean up litter already on the forest floor as has been implied. Nor will Jarrah, the predominant forest species in the state, be utilised. Yet we find that much of the Jarrah forest is to be cleared and replaced with species resistant to dieback, thus creating an inordinate amount of waste. Furthermore, most of current pulp production goes into unnecessary areas which in turn creates a waste problem of its own. Consequently this project is a far cry from the full-integrated system that was supposed to be the aim. This is especially true when energy costs are also considered. Intensive production forestry requires far more energy outlay than responsible timber getting because much more extensive treatment is involved. Accordingly we find that energy is being wasted to produce more of a waste product which requires energy to remove.

Consequently we cannot accept this impending Marri wood-chip project as being in any way compatible with multiple usage: not only is it mutually exclusive with this concept but in fact, it seeks to destroy it. There are two competing philosophies; multiple usage and intensive production forestry.

The timber lobby have plagiarized the term multiple usage in order to deflect attention from production forestry. A prime example of how they do this can be found in the 200 yard forested corridors which are to be left along major roads and watercourses for the supposed purposes of tourism, habitat and stream protection. These corridors are presented as being evidence of multiple usage. In fact their real purpose is to act as fire-breaks to protect the regrowth which is very vulnerable to fire. (See Appendix 2).

As a last resort, when under attack this lobby falls back onto maintaining that we need to increase timber production to meet future demands. Yet we have demonstrated that timber production can be easily cut back to acceptable levels without affecting domestic supplies. This immediately makes a lie of the future demand estimates produced by this lobby as these are always expressed as multiples of present demand. Moreover this lobby has a propensity to over-estimate in its own interests as has already been established with softwoods. Furthermore, these overestimates are aggravated by the inclusion of pulp as a basic requirement from the forests. This is not necessary since there are alternatives which can be grown under conventional agricultural conditions and which yield higher quality papers (e.g. Hemp, Kanafe).

Of course we do not deny that timber will become a scarce resource but it is equally true that the other benefits, that the forests provide, will become equally scarce. Water and the values of National Estate and recreation are, we submit, equally vital as timber to our society and accordingly must be protected.

This holds particularly true for the Karri forest which the Conservation Through Reserves Committee succintly described:

"With their associated understory, the giant Karris constitute a unique and ancient forest: one of the great botanical associations of the world. It does not take a forester or botanist to recognise this . . ."[52]

This forest is of great value to our society. Not only is its "sombre magnificance" awe inspiring in itself but it reflects the spirit of our pioneers who bravely felled it only to be bitterly disappointed – for these trees, which are among the tallest in the world, grow on extremely poor soil. This contrast, between the tall trees and the ppor soil, embodies the very nature of our country. Yet this project threatens to leave virtually no part of this, the only Karri forest in the world, untouched.

However, apart from these aspects which could be considered essential to preserve, we submit that this impending project and forest utilisation in general are not the optimum ways of maximising the economic benefits of the forests to our society. The present regime has not been based on rational planning, but rather has been developed to serve the pecuniary interests of very few.

We submit that, apart from the improprietry of this, we can no longer afford to squander these precious resources. Accordingly we have suggested alternate strategies which to our knowledge have never been tested – but consider worthy of examination since they are compatible with the multiple usage concept.

We have demonstrated that this project no longer bears any relation to its supposed silvicultural function, that it fails in achieving the goals set out in the E.I.S. and that it involves huge losses, both aesthetic and economic, for not only the people of Western Australia but for all Australians. On top of this, to add insult to injury, we shall elaborate in Chapter 3 how this project will also be receiving a direct public subsidy.

Accordingly, we consider that such mis-use of scarce resources should be of great concern to the Senate Select Committee on the Social Environment for these resources are the birthright of the Australian people. Consequently the allocation of these scarce resources should be a community decision and not one taken by a vested interest group.

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52. Report of the Conservation Through Reserves Committee, 1975, p2-16.

PUBLIC VERSUS PRIVATE INTERESTS IN THE WOOD-CHIP INDUSTRY

We will demonstrate that the impending Manjimup wood-chip project, the logical extension of the production forestry ideology, will only benefit two huge British multinational corporations and an already wealthy section of the Australian community. We believe that these interests, and those who identify with them, are so powerful within the Western Australian political structures, that a proper assessment and implementation of the communities' needs in relation to the non-wood production values of native forests will not be made. Accordingly we submit that the Senate Standing Committee on the Social Environment cannot properly carry out its terms of reference without initiating an intervention into the industry in the public interest.

It may seem simplistic to state that the function of the wood-chip industry from the point of view of the W.A. Chip and Pulp Co. Pty Ltd is to make a profit. However we wish to stress the frequently forgotten point that the public interest is incidental to the objective interest of the W.A. Chip and Pulp Co. and the intensive forestry industry in general. The unrelated nature of the public interest to commercial operations is illustrated by examining one of the most obvious strategies for profit maximisation viz, increase of market. In the case of the wood-chip industry this relies on increased sales of paper products which we have demonstrated previously, pollute our environment at both the production and disposal points of the operation, frequently without contributing to the usefulness to the consumer of the products being packaged or promoted. The Forwood Conference, in assessing future "community needs" in relation to pulp and paper products, manipulated future population estimates and did not even consider that a future community need might well be to minimise pollution and the production of costly wasteful junk.

However, our main concern is with the impending Manjimup wood-chip project and hence with the environmental implications, at the point of harvesting, of the profit maximisation interest of the W.A. Chip and Pulp Co. Assuming markets can be sustained, the most obvious profit maximisation strategy of an extractive industry is to increase the size of its potential harvest; in this case to have access to a greater area of forest. Another manifestation of the profit maximisation interest lies in extracting that harvest as rapidly as possible (again assuming markets can be sustained). This relates to the concept of what economists term Present Value; assuming that profitability on a given amount of chip-wood, e.g. $1, will be the same in three years time, that $1 is more valuable now, or the sooner it is obtained, because it can be invested and hence be worth more than $1 in three years. Accordingly the interest of the W.A. Chip and Pulp Co. lies in having access to the maximum proportion of forest resources and in harvesting those resources as quickly as possible. In terms of the administration of the project this interest would be manifested in increasing, or maintaining, the annual tonnage of chip-wood made available to the company under the Agreement. It is this very factor, the annual tonnage to which the State is committed and its consequences for the scale and intensity of the project, which exacerbates the mutually exclusive relationship of the wood-chip project with the concept of multiple usage. This is most tangibly manifested in the paradox now facing the W.A. Government in relation to the recommendation of the Conservation Through Reserves Committee to excise the Shannon River Basin from the wood-chip licence area. That this is how the company perceives its own interest is illustrated by explicit opposition to the Shannon River National Park proposal in *Woodchip News*, their publicity organ, and in a written response to the C.T.R.C. Report.

The rationale of the project by the Forests Department in the Environment Impact Statement is that it will perform desirable silvicultural functions[1]. We believe, as explained in Chapter 2, that in the course of the development of the project, this function has become incidental to profit maximisation considerations which have come to the fore. That, as we have been informed, the Forests Department originally argued for a much lower annual tonnage commitment than contained in the present Agreement and enabling Acts indicates that our belief has a sound basis. We therefore recommend that the Australian Senate Standing Committee on the Social Environment seek to obtain all the documentation associated with the negotiations within the Western Australian Government and between that body and the W.A. Chip and Pulp Co. In this way an accurate picture of the anatomy of the decision making leading to the 1973 Agreement, including the relative influence of profit maximisation and silvicultural considerations might be obtained. In addition, the roles of the various government departments involved, in particular the Forests Department and the Department of Development and Decentralisation (formerly the

1 Forests Department, W.A.: Environmental Impact Statement -- Marri Wood-Chip Project, 1973, page 2.

Department of Industrial Development), and the considerations of each, should be made public in the interest of open government in relation to a publicly owned resource. We suspect that profit maximisation, which may have originally been an incidental consideration, has become the primary determinant of decisions which have deep environmental implications. This has come about through the power and influence of those interests who stand to benefit from intensive production forestry.

If the interests of the W.A. Chip and Pulp Co. lie in exploiting as much forest as they can, as quickly as possible in order to maximise profits, this is not obvious from their propaganda. This is to be expected because their interests are incidental to the public interest and hence are not the sound basis for public relations. Accordingly functions of the project which are incidental to the motivation of the company are usually stressed because they can be construed as being in the public interest.

One of the arguments most frequently put forward by proponents of the project is that it will create employment. This type of argument is particularly important because it gives a false impression of social justice and is particularly persuasive with Labor Governments whose constituency is largely based on the working class. This type of manipulation probably played an important role during the crucial decision making period of 1973 when Labor was in government at the State and Federal levels.

Discussion of the employment creation functions ascribed to the industry has been particularly confused. We submit that two discrete functions need be delineated viz:

- Eliminating pre-existing unemployment within the work force affected by the industry;
- Creation of employment above and beyond pre-existing needs (i.e. local development).

It is easily demonstrable that the impending wood-chip project will not be performing the first of these functions. Earlier this year the principal shareholders of the W.A. Chip and Pulp Co. Pty Ltd, Bunnings Timber Holdings Pty Ltd, applied to the Australian Government for permission to import migrant labour to work in the South-West timber industry. We submit that the fact that this company, acting in its own commercial interest, felt this need during a time of high unemployment indicates that:

- There is no pre-existing need for employment which the impending wood-chip project will fulfil;
- The remuneration and conditions existing in the timber industry do not meet the needs of Australian workers.

If this is the case at the present time, then the arguments in favour of the project in terms of eliminating unemployment during 1973, a time of relatively high employment, must have been false or exaggerated. Accordingly employment creation functions of the project must be justified in terms of local development.

The underlying rationale of decentralised development rests largely on environmental considerations. It is held that it is more desirable, in terms of the resultant social environment, for people to live in smaller towns than large metropolitan cities. With this notion we heartily agree. However for such development to take place at the expense of the local environment, in a manner which adversely affects the social environment of the whole Western Australian community is contradictory.

The Environmental Impact Statement states that the development functions of the project were to be the subject of a separate document being prepared by the Department of Development and Decentralisation. This is another of the mysteries of the project because the government refused to table it in the W.A. Parliament and it has never been published. We submit that this should be of great concern to the Australian Senate Standing Committee on the Social Environment because it is within the area presumably covered by this document that much of the social environmental impact on the immediate locality would presumably be assessed. We therefore recommend that the Committee seek to obtain access to this document and that it be made public in order that the community will know on what basis such a major resource utilisation decision was made.

We suspect that this document will prove that no opportunity cost analysis in terms of local development has been made with respect to either the forest or capital resources used in this project. Opportunity cost is a term used by economists to encompass the fact that the allocation of a given resource to utilisation X precludes its utilisation for purpose Y. Therefore the opportunity of using it for purpose Y is a cost of utilising it for purpose X. We submit that such an analysis should be a pre-requisite for all projects and should involve the opportunity costs in terms of local development or employment creation if these are part of the rationalisation of the project. We will

deal firstly with the opportunity cost of the forest resources involved, and then with the capital resources, in terms of employment creation.

The opportunity cost of the forest resources involved in the wood-chip project is Multiple Usage which we have dealt with previously. This affects the social environment of all Western Australians and can be measured tangibly in terms such as the Shannon River National Park proposal and the conversion of the licence area to a tree farm with the consequent loss to the National Estate. It will cost the people of Western Australia the aesthetic, recreational, educational, scientific and water catchment values of the area.

Although the various functions of Multiple Usage cannot always be measured in terms of commerical value, some such as tourism, can provide a great deal of employment. The potentially greater commercial value of forests as assets for tourism over their value for production forestry has been dealt with previously.[2] The cost in terms of the affect on present forest based industries such as apiculture is one opportunity cost which the Environmental Impact Statement gives a very cavalier treatment. We understand that W.A. apiarists are very concerned about the affect of the impending wood-chip project on their very environmentally sound industry.

Of more concern in terms of employment creation is the opportunity costs of the capital resources being used. In addition to equity capital ($1,600,000) a total of $10,000,000 has been made available for the project through two issues of debentures created by the W.A. Chip and Pulp Co. Pty Ltd. We submit that more environmentally sound investment of this capital may well have created an equal or greater amount of employment either in the Manjimup area or elsewhere where a greater pre-existing need was felt. In fact the Environmental Impact Statement indicates that a total of 350 men will be employed by the project,[3] which is not a great deal for the size of the investment involved. The basis of the estimate is not known. We suspect that if the Australian Senate Standing Committee on the Social Environment gains access to the Department of Development and Decentralisation's report on the project this will confirm that no opportunity cost analysis, in terms of employment, of the capital invested in the project has been made. We submit that this will confirm our contention that successive Western Australian Governments have simply rationalised a project which is detrimental to the social environment of the Western Australian community.

A related aspect of the project which we find disturbing is that much of the capitalisation has come from public sources. We cited peviously the two debenture issues created by the W.A. Chip and Pulp Co. Pty Ltd totalling $10,000,000. The smaller of these (for $2,400,000) is in favour of the two principal parent companies, Bunnings Timber Holdings Pty Ltd and Millars (W.A.) Pty Ltd. The nature of our society, based as it is on the virtual inviolability of the private ownership of capital, is such that we cannot expect capitalists to necessarily invest their funds in environmentally sound projects when the profit motive dictates otherwise. However this does not apply to the far larger debenture investment of $7,600,000 by the Australian Industries Development Corporation, the Rural and Industries Bank of W.A. and the Australian Mutual Provident Society Ltd. We submit that the former two organisations, being publicly owned bodies, should be required to invest their funds in the public interest and not on projects which benefit only narrow and largely foreign interests as we believe this project does. A further disturbing aspect of this is the impropriety of one of the directors (and ultimately also a major shareholder) of the W.A. Chip and Pulp Co., Mr G.M. Bunning, also being a director of the Australian Industries Development Corporation, a public body which has contributed to the capitalisation of the project. This is a conflict of interest of a form which would not be allowed for members of parliament and we submit should not be tolerated on the boards of statutory corporations. The impropriety of this type of interlocking directorship involving a public body is further illustrated by the fact that another project which has been criticised on the basis of environmental considerations, the operations of Fish Protein Concentrates (Tasmania) Pty Ltd of which Mr Bunning is also a director has been partly capitalised by the A.I.D.C.

In view of the fact that there has apparently been no opportunity cost analysis in terms of employment creation or regional development, of the publicly owned forest and capital resources involved in the project, its proponents cannot legitimately argue in favour of it on these grounds. However we believe that such an analysis, favouring the

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2 See Chapter 2

3 Forests Department, W.A.: Environmental Impact Statement – Marri Wood-Chip Project, 1973, page 8.

impending wood-chip project is only a necessary and not sufficient condition for justification of the project. Should the largely intangible benefits to the people of Western Australia of implementing Multiple Usage in relation to W.A.'s native forests not coincide with employment creation equal to that of the impending Manjimup wood-chip project that would not justify rejection of our proposals. We submit that quite well founded concern for the welfare of the working class involved in the timber industry can be manipulated into support of projects and practices opposed to the long term interests of all sections of the community. However, we also reject unequivocably any suggestion that the working class should have to suffer as a result of economic restructuring necessitated by the public interest, as typified by environmental considerations. We will cite two examples of the manner in which production forestry interests can use the blackmail of unemployment to win public and political support to maintain and extend the scale and intensity of their exploitation of native forests.

The first is a recent response of the timber industry to the Shannon River National Park proposal. An "industry spokesman" was quoted in a throwaway rag published by a W. A. supermarket chain as asserting that 2,600 people would be thrown out of work if the Conservation Through Reserves Committee Report's recommendations were implemented.[4] (A gross exaggeration!) Similarly the current over-cutting of our native forests has been justified by the Minister for Forests in terms of maintaining employment.

A further example is paradigmatic of how economic restructuring necessitated by environmental considerations should not be implemented. In 1972 the Commonwealth Railways wished to introduce concrete sleepers in lieu of the traditional timber product. This would appear to be a sensible move as the proposed product is as useful to the community as timber sleepers and in view of the prevailing rate of over-cutting of native forests cited previously. However this was to be a "sudden death" changeover necessitating considerable dislocation of labour in the timber industry. Accordingly the then Labor Government was forced to act contrary to good forestry practice and the public interest to have this decision reversed.

We submit that this type of sudden death dislocation can be modified into a gradual scaling down of an industry using natural movements of the workforce due to death, retirement and resignation in order that restructuring is achieved without traumatic mass lay offs. Examples of other strategies to achieve the same end can be taken from the programme of the Australian Government following the changes in tariff policies in 1973. Further examples can be seen in the waterfront industries wherein considerable restructuring has been effected as a consequence of containerisation without individual dislocation, by means of positive terminations incentives and a gradual scaling down using natural movements. This latter case was imposed on the employers by the industrial strength of the workers concerned. We submit that a similarly humane method of effecting economic restructuring is the right of all workers and that governments and industry should not be permitted to take advantage of the industrial weakness of certain sections of the workforce in effecting restructuring. This would be most unjust in the W.A. timber industry as this has traditionally been the scene of low remuneration and poor conditions for the workers concerned.

We submit that the Australian Senate Standing Committee on the Social Environment could play an historic role in the development of Australian society if it pioneered a humane method of bringing about economic restructuring necessitated by environmental considerations. In particular it could remove from big business interests their principal means of manipulating humanitarian concerns, to override wider environmental considerations. It could provide a means of maintaining and even improving the social environment of workers by means such as redundancy pay, retraining and gradual scaling down of the industry concerned.

We are very concerned that the people of Western Australia are not only losing a substantial part of the state's remaining native forest and bearing the opportunity cost of the public capital involved, but are also apparently subsidising this profit making venture. This conclusion is drawn from the figures provided by the Forests Department in the Environmental Impact Statement:[5]

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4 Living Today; May 1975.

5 Forests Department, W.A.: Environmental Impact Statement — Marri Wood-Chip Project, 1973, Attachment 8.

Estimates of Capital Costs and Recurrent Revenue and Expenditure to the Forests Department Associated with the Wood-chip Project

(a)	Capital Costs	
	1. Buildings	$560,000
	2. Vehicles	32,000
	3. Nursery Equipment	5,000
	4. Radios	8,000
		$605,000
(b)	Annual Recurrent Costs	
	1. 20 x operational staff	$117,300
	2. 21 x operational employees	98,700
	3. 8 x planning and research staff	49,100
	4. 5 x head office staff	25,000
	5. Training costs	24,000
		$314,200
	6. 50% overhead loading	157,050
	Total salaries and overhead	$471,150
	7. Hand planting	25,000
	8. Plant hire for regeneration	50,000
	Total of these operational costs	75,000
	Total Annual Recurrent Costs	$546,150
(c)	Annual Revenue	
	Royalty on 680,720 tons @ 85.3 cents/ton	$580,654

The annual revenue exceeds the annual recurrent costs by $34,504. If the project proceeded at full production for the duration of the Agreement (15 years) the total return to the taxpayer would be $517,560 or $87,440 less than the initial capital outlay. However the Environmental Impact Statement indicates that the project will take four years to build up to full production resulting in a loss over the first four years of $952,040. In the remaining eleven years the project will return $379,544 resulting in a loss for the life of the Agreement of $572,496. We submit that this loss to the taxpayer by subsidy of a profit making company is scandalous.

These figures are minimal because they do not include the costs of fire protection which will be increased because of the project. Nor do they include estimates of the costs and revenue to the other government departments involved in the project, viz the Bunbury Port Authority, the Western Australian Government Railways, the State Electricity Commission or the Environmental Protection Authority. For these no estimates appear to have been made public.

Any attempt by the Forests Department to recoup the early substantial loss to the public purse by re-negotiation of the agreement will depend on favourable movements in terms of costs of labour and equipment and the ability of the company to raise the price of its chips. The former is unlikely as we can expect inflation to affect the Forest Departments and the Company equally. The latter is an unknown variable because as was pointed out in the Australian Financial Review recently the international market price for wood-chips is uncertain.[6]

There are several nations exporting wood-chips but only one importer. Other exporters, notably Malaysia, do not attempt regeneration and therefore have lower recurrent costs.[7] Thus the market favours the purchaser and particularly disadvantages Australia. Hence the likelihood of raising royalties and retaining a commercially viable project is remote.

It is established therefore that the project does not benefit the community by meeting pre-existing employment needs, nor does it create further employment in the most appropriate manner and finally the people of W.A. appear to be monetarily subsidising their tremendous opportunity cost, viz multiple usage of very scarce remaining native forest. The aesthetic, scientific, recreational and educational values to be foregone if the project continues will probably never be able to be measured in dollars but are in very real terms, the greatest subsidy of this project.

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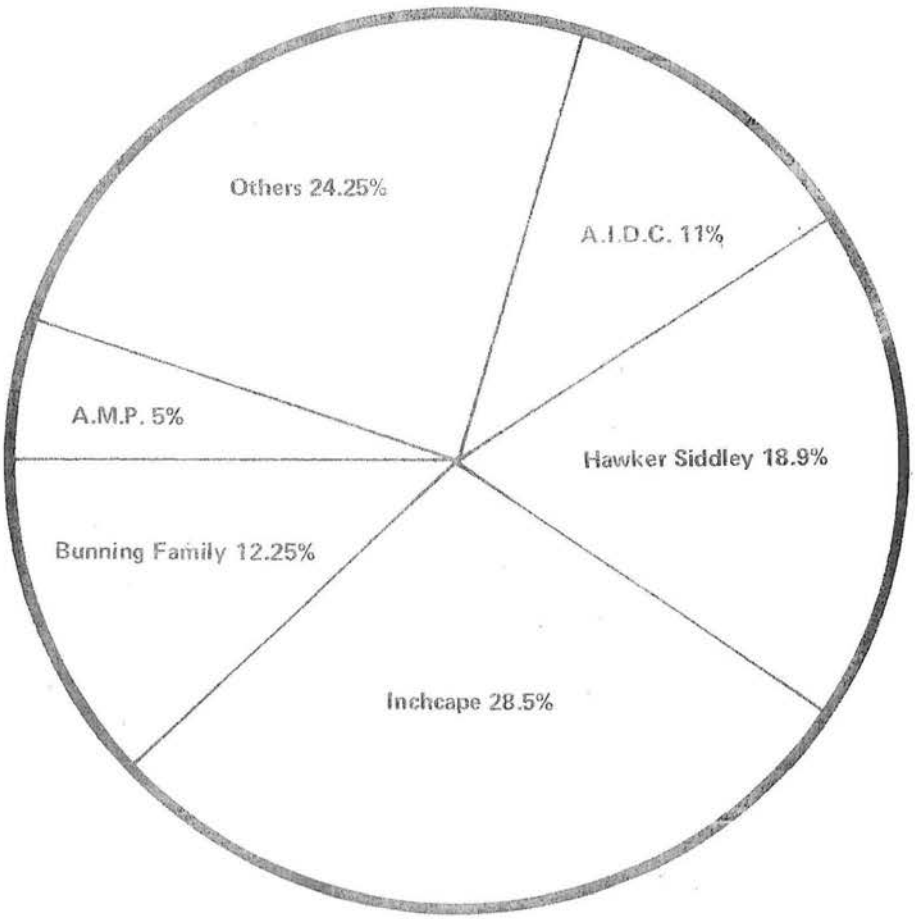
6 Australian Financial Review June 3, 5, 6, 1975

7 Australian Conservation Foundation: The Great Forest Sellout. Melbourne, 1975.

Figure 5: Shareholders of the W.A. Chip and Pulp Co. Pty. Ltd.



SHAREHOLDERS OF THE W.A. CHIP AND PULP CO. PTY. LTD.

NAME	NO. OF SHARES	% INTEREST
Bunnings Timber Holdings Pty. Ltd.	560,000	35
Millars W.A. Pty. Ltd. **	456,000	28.5
Australian Industries Development Corporation	176,000	11
Hawker Siddley Building Supplies Pty. Ltd.	160,000	10
Australian Mutual Provident Society	80,000	5
Whittakers	32,000	2
Worsley Timber Pty. Ltd.	32,000	2
Development Finance (Underwriting) Ltd.	30,000	1.9
Covest Pty. Ltd.	21,000	1.3
Adelaide Timber Co. Ltd.	16,000	1
Gandy Timber	16,000	1
Kareela Pty. Ltd.	5,000	.3
Oldham, J.A. *	16,000	1
TOTAL	1,600,000	100%

*Manager of the W.A. Chip & Pulp Co. Pty. Ltd.
** Inchcape subsidiary

- The only clear beneficiaries of the project are the shareholders of the W.A. Chip & Pulp Co. With the exception of the Manager all these are companies.

Further analysis is required to demonstrate the nature of the interests represented. The largest shareholder, Bunnings Timber Holdings Pty Ltd were the initiators and sole shareholders of the company until 1973. They have, by a process of vertical monopolisation, interests in the processing, distributing, wholesaling, exporting and retailing facets of the W.A. timber industry. They also extend into general hardware and have an interest in Fish-Protein Concentrate (Tas) Pty Ltd.

Bunnings Timber Holdings Pty Ltd has over 1,000 shareholders but does not represent a balanced cross section of the community. Its most recent Annual Report states 70.43% is owned by the largest 20 holders of ordinary stock units. The largest single group of shareholders are the Bunning family. Eight individuals with the surname Bunning and three investment companies owned by these same individuals account for 35% of the shares. The family have grown wealthy and powerful from their interests in the W.A. timber industry, which date back to the turn of the century, at the expense of a workforce which has traditionally laboured under poor conditions for low remuneration. This family's interests in the wood-chip industry account for 12.25% of the W.A. Chip and Pulp Co. Pty Ltd.

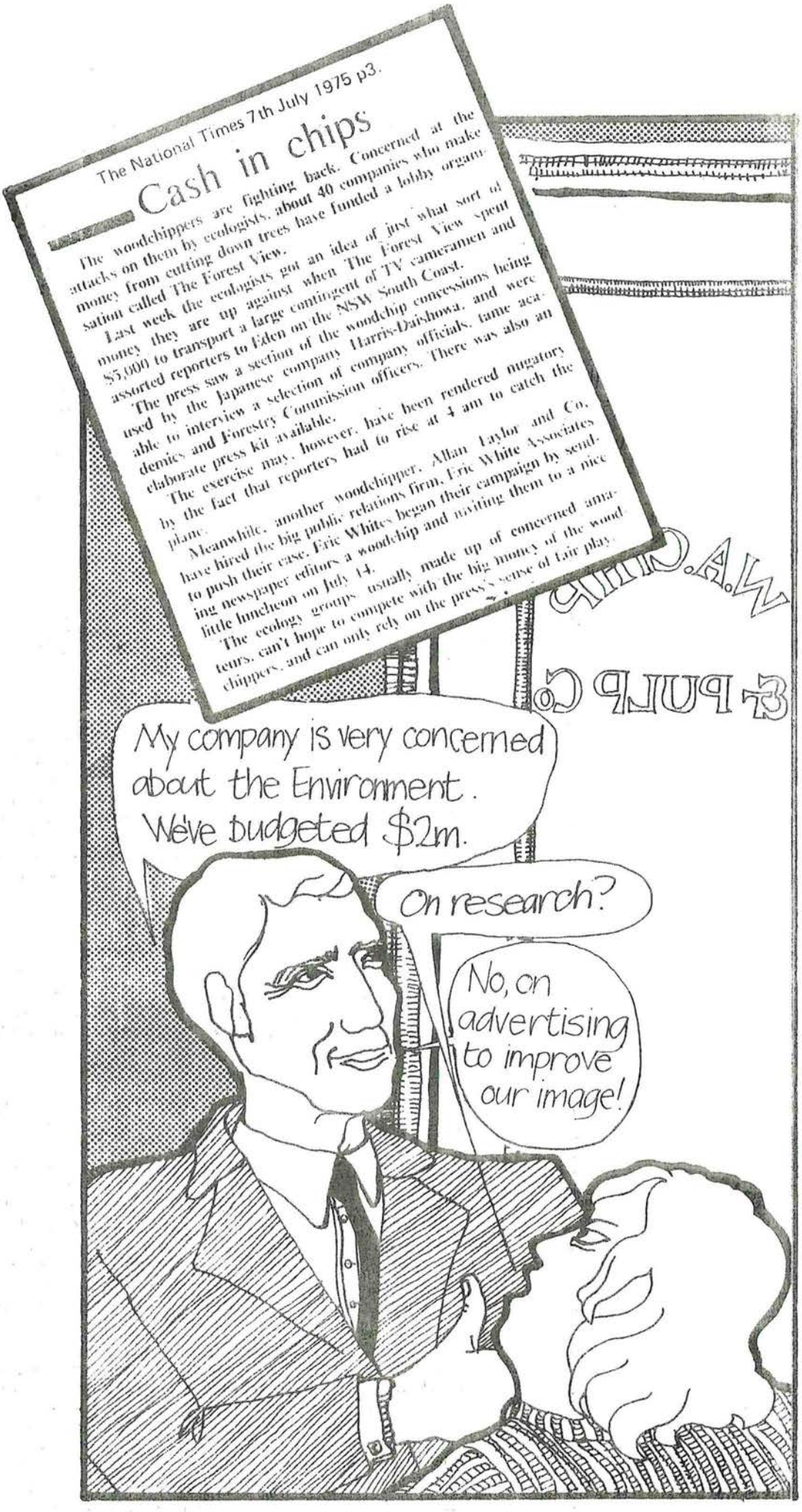
The next biggest shareholder in Bunnings Timber Holdings is H.D.H. Holdings Pty Ltd a subsidiary of the Hawker Siddley Group Ltd of London. This is the 26th largest British corporation by order of turnover and with another subsidiary company Hawker Siddley Building Supplies Pty Ltd has a two-fold interest amounting to 18.75% of the W.A. Chip and Pulp Co. Pty Ltd. This is only a small part of its total interests which span most of the former British Empire.

This pattern is repeated with the next biggest shareholder of the W.A. Chip and Pulp Co. Pty Ltd, Millars (W.A.) Pty Ltd, which is owned ultimately by Inchcape and Co Ltd also of London. This company is the 55th largest British corporation by order of turnover, is chaired by the Earl of Inchcape, and represents the traditional interest of the Inchcape family in addition to more recent takeovers such as the Borneo Company. In a manner strikingly similar to the interests of Hawker Siddley it represents a phenomena described by Kwame Nkrumah as neocolonialism, whereby *de facto* imperialism replaces its *de jure* variant through much of the largely defunct Empire. These two companies account for almost half (47.25%) of the interests in the W.A. Chip and Pulp Co.

After the Bunning family the next biggest shareholding group in the Australian Industries Development Corporation. We have elsewhere (seepage 3.3) criticised the apparent practice of that body of investing public funds in environmentally unsound projects. In particular we are concerned at impropriety apparent from the interlocking directorship of Bunnings Timber Holdings with a public body with which it does business such as the A.I.D.C., through Mr G.M. Bunning.

Following the 11% of A.I.D.C. the next largest interest group is the A.M.P. Society whose criticisms of government participation in the economy related to the proposed Australian Government Insurance Office do not apparently extend to the publicly capitalised and subsidised W.A. Chip and Pulp Co. Pty Ltd. The remainder of the interests, about one quarter, are divided between the manager, four smaller timber companies, three investment companies and the remainder of over 1,000 shareholders of Bunnings Timber Holdings Pty Ltd who are not included in the Bunning family or the Hawker Siddley Group. Thus the only clear beneficiaries of the W.A. wood-chip industry are two huge British multi-nationals, a wealthy Australian family and a bevy consisting of a government body, an insurance company, and minor commercial and timber interests. In short hardly a group deserving of a public subsidy.

We have previously cited the fact that the Environmental Protection Authority of W.A. expressed the fear that the obligations of the State under the Woodchip Agreement Act, to provide 670,000 tons per annum of wood to the company, and to excise environmentally threatened areas from the licence area are mutually irreconcileable. We have also asserted that this contradiction of public and private interests is manifest in W.A. at the present time in relation to the Report of the Conservation Through Reserves Committee to the Environmental Protection Authority insofar as its recommendations affect the licence area of the W.A. Chip and Pulp Co. under the 1973 Agreement Act. We consider that the implementation of the proposals of the Conservation Through


The National Times 7th July 1975 p3.
Cash in chips
The woodchippers are fighting back. Concerned at the attacks on them by ecologists, about 40 companies who make money from cutting down trees have funded a lobby organisation called The Forest View.
Last week the ecologists got an idea of just what sort of money they are up against when The Forest View spent $5,000 to transport a large contingent of TV cameramen and assorted reporters to Eden on the NSW South Coast.
The press saw a section of the woodchip concessions being used by the Japanese company Harris-Daishowa, and were able to interview a selection of company officials, tame academics and Forestry Commission officers. There was also an elaborate press kit available.
The exercise may, however, have been rendered nugatory by the fact that reporters had to rise at 4 am to catch the plane.
Meanwhile, another woodchipper, Allan Taylor and Co, have hired the big public relations firm, Eric White Associates to push their case. Eric Whites began their campaign by sending newspaper editors a woodchip and inviting them to a nice little luncheon on July 14.
The ecology groups, usually made up of concerned amateurs, can't hope to compete with the big money of the woodchippers, and can only rely on the press's sense of fair play.
My company is very concerned about the Environment. We've budgeted $2m.
On research?
No, on advertising to improve our image!

Reserves Committee to the Environmental Protection Authority are only a necessary but not sufficient condition of the implementation of the multiple usage in W.A.'s native forests. This will require a substantial reduction of the annual tonnage of timber made available to the company, i.e. a major variation of the Agreement. This is contrary to the profit maximisation interest of the W.A. Chip and Pulp Co. and has been vigorously opposed both by them and their industrial lobbies.

In view of conditions prevailing in Western Australia at the present time we see very little hope of this contradiction being resolved in the public interest. In particular the response of the Western Australian Ministers and the Forests Department lead us to feel that the only hope lies in intervention by the Australian Parliament and Government. By so doing the interests of all Western Australians would be defended against the very narrow and substantially foreign interests which stand to benefit from the impending wood-chip project. We are aware of the inordinate power and influence which these interests exercise within business and politics, particularly in W.A., and that they will bring pressure to bear on the Committee.

The Environmental Protection Authority in its Interim report expressed concern that *strong pressure* may be applied to the Conservator of Forests (the Head of the Department) to ignore environmental considerations in exercising his powers pursuant to the 1973 Agreement and Act.

An index of the power of these interests within the community is provided in Appendix 3 of this submission. This is based on the assumption that the directors of the principal parent companies, Bunnings and Millars, constitute a group with a strong vested interest in maintaining the project at its present level. A list of their positions in business and other power structures is a measure of their power and influence. Another aspect is their access to wealth and resources in defending their interests. This has been shown by the activities of the national lobby, Forest View, and by the W.A. Chip and Pulp Co. in Western Australia.

It is to be hoped that the Australian Senate Standing Committee on the Social Environment will initiate a resolution of this conflict in favour of the public interest. To establish Multiple Usage of our vastly diminished native forest and thereby ensure the preservation of a unique part of the National Estate, and the various values to the public which will accompany this, is an urgent need which is being increasingly acknowledged within the community.

SUMMARY AND RECOM-MENDATIONS

In this submission we have argued that the decision-making leading to the impending Manjimup wood-chip project; the

- Signing of the Agreement between the W.A. Government and the W.A. Chip and Pulp Company,
- Passing of the Wood Chip Industry Agreement Act Amendment Act 1973 by the W.A. Parliament, and
- Granting of an export license by the Australian Government,

took place with great haste and without due regard for the social, biological and physical environmental impacts of the project. In attempting to modify this project in the public interest, we have been informed that we are too late. The simple fact is, that by the time the public of Western Australia had become aware, to some extent at least, of the implications of this project for the aesthetic, recreational, educational and scientific values of our native forests, the commitment had already been made. We submit that the Australian Senate Standing Committee on the Social Environmental should take urgent action to reverse this cavalier and irresponsible decision-making. In terms of the politics of such action, an impending project is more readily modified than an established one, albeit less readily than a proposed one.

Our first recommendation is:

1. *That the Shannon River Basin, as delineated in the Report of the Conservation Through Reserves Committee to the Environmental Protection Authority, be excised from the Wood-Chip License Area to be reserved and managed as a National Park.*
2. *That an appropriate reduction be made in the annual tonnage made available to the W.A. Chip and Pulp Company from the License Area, under the 1973 Agreement.*

In the main body of the submission we have indicated our concurrence with C.T.R.C. arguments for an increase in the pitifully small proportion of the State's forests set aside as National Park. We have accepted the desirability of reserving a self contained drainage basin, adjoining an undisturbed (or most nearly so) estuary and that the Shannon River Basin and Broke Inlet are the most suitable areas for this.

We are aware that groups sharing the same basic premises as ourselves have argued for different areas to perform the same functions. We claim no expertise in the selection of biologically representative samples of landscape and hence concur with the C.T.R.C. selection of area until a more suitable area is demonstrated, but regard the magnitude as mandatory.

The second part of the previous recommendation, a reduction in the annual tonnage to be taken from the license area, is a corrollary of the reservation of the Shannon River Basin. It has been estimated that the Shannon River Basin, although only 6% of the license area, contains 20% of the timber. It follows then, that its excision would necessitate a 25% increase in the intensity of cutting, by tonnage, throughout the balance of the license area and an increase in the intensity of cutting, by area, of 47% on average. Yet the E.I.S. stated that the proposed intensity of cutting in the whole license area was the maximum desirable. We take this as *"prima facie"* evidence of the need to reduce the annual tonnage made available to the W.A. Chip and Pulp Company from the license area.

In the main body of this submission we have described this contradiction, between the C.T.R.C. Report and the E.I.S. on the project, as a paradox facing the W.A. Government. Since that was prepared a decision has been made by the E.P.A. to reserve 91% of the Shannon River Basin without a reduction in the annual tonnage of chip wood to be taken. This came in a report by the E.P.A. which also apparently stated that the E.P.A. reservations about the project, expressed in its Interim Report cited in this submission, were now satisfied. Unfortunately we have not been able to obtain a copy of this document. That political pressure may have been brought to bear on this decision is evident from the fact:

- That the Government, including the Minister for the Environment, expressed unquestioning approval of the project prior to the E.P.A. Report.
- The Report, breaking almost two years silence since the Interim Report of 1973, was

presented the day before a major public meeting in the Perth Town Hall convened by our Campaign.

We submit that this decision is totally inadequate in that:

- It does not reserve a self contained drainage basin, as deemed desirable in the C.T.R.C. Report.
- It does not make an appropriate reduction in the annual tonnage, despite the consequent reduction of the available forest resource.

In this submission we have described the C.T.R.C. Report as being a necessary but not sufficient condition of the introduction of Multiple Usage into W.A. forestry. This is because its terms of reference were not functionally oriented, and more seriously, after 1973 the existence of the woodchip industry, at the stipulated annual tonnage, was enshrined in legislation and formed one of the constraints accepted by the Committee. Hence it was precluded from making a proper assessment of the State's needs in relation to the non wood-production values of native forests, even if its explicit terms of reference had required this.

In short, there has never been an assessment of the needs of the people of W.A., their successors and visitors, in relation to the various functions of our native forests. Allocation of this finite resource to competing forms of land utilisation has been principally determined by the private market which will not measure real community needs, especially those of an intangible and therefore non-commercial nature.

The role of governments in this resource allocation, especially the affects of the Forest Department (although by no means the desire of all its officers) has been to service private interests rather than guarding the public interest.

Accordingly, we recommend:

That a Royal Commission, or a similarly constituted inquiry, be initiated to:

a) Assess the aesthetic, recreational, educational, scientific and wood production needs of present and future populations in relation to W.A.'s native forests.

b) Make recommendations on forest management priorities and practices in W.A. in order that the maximum benefit to the whole community, and the preservation of our National Estate, is realised.

The need for a Royal Commission or a similar form of inquiry has been outlined in a letter to the Prime Minister from the Nature Conservation Council of New South Wales, which we have reprinted as Appendix 4 of this submission. We have not made a recommendation as to the breadth of the terms of reference of this inquiry. Whether it takes place as a state or national inquiry is a question of secondary importance. We do however, see much merit in a national commission as the requirements of the production forestry industry are apparently being determined at a national level (e.g. Forwood Conference) and similar experiences to our own seem to be being had in other states.

We have framed our two recommendations in the form "that X take place". However, we are aware that the Australian Senate Standing Committee on the Social Environment only has the power to make recommendations to the Australian Parliament and Government. It is these bodies to which we look to initiate Multiple Usage into W.A. forestry. Whilst principal responsibility for forests rests with the States, in the case of the W.A. Government its identification with the interests of the W.A. Chip and Pulp Company demonstrates a marked non propensity to guard the public interest against vested private interests. The federal participation in forestry industries through custom (e.g. railway sleepers), funding (e.g. pine planting) or export licenses (e.g. wood-chip industry) would ensure the Australian Government's power to implement the recommendations of such a Commission of Inquiry.

One aspect of the projected inquiry which is contained in Recommendation 2 is that it should cover all aspects of current forest utilisation. Whilst wood-chipping represents the major organised threat to our native forest it cannot be seen in isolation because of the need for an overall assessment of non wood production needs in relation to the whole of W.A.'s native forest. In other parts of the forests, activities such as pine planting and mining are posing a more intensive but, at present, less extensive threat. Further, the

spectre of *Phytophora cinnamomi* is another threat which exacerbates the general situation of a depleted and diminished forest. Finally, a silvicultural nexus between wood-chipping and the sawlog industry resulting from the apparent need to clear areas to ensure Karri regeneration means that one of these industries within the license area cannot be reviewed without implications for the other. One of the now stock responses to our campaign, by proponents of the project, is to cite this nexus (which applies only to Karri-Marri forest anyway) and to claim that the damage will be done anyway by the saw log industry. This argument is absurd and does not, empirically or logically, negate our propositions relating to the social functions of the changes necessitated by the wood chip industry or their ecological viability. It does however, call into question the current rate of overcutting of the sawlog industry which comes within the terms of reference of our projected inquiry.

In a few short months our campaign has demonstrated the wide-spread support for the introduction of multiple usage in W.A.'s scarce remaining native forests. We look to the Australian Senate Standing Committee on the Social Environment to initiate moves in this direction and suggest that such action will earn the gratitude of the people of Western Australia, their successors and visitors.

Appendix 1: The Environmental Impact Statement

The concept of Environmental Impact Statements (E.I.S.)is relatively new in Australia. The Federal legislation (Australian Government Environmental Protection (Impact of Proposals) Act, 1974) is recent. Under this act, an E.I.S. is required for any project requiring Federal Government funds, or involving Federal constitutional power (e.g. granting of export licenses).

In Western Australia, there are no provisions under the act which established the Environmental Protection Authority (Environmental Protection Act, 1971) for E.I.S.'s to be prepared or assessed and at this stage there appears to be no plan to introduce a system of E.I.S.'s. The Conservation and Environment Department (servicing the E.P.A.) has recently prepared guidelines for Beach Sand Mining Environment Reviews, and may in the future prepare other review guidelines (for other types of proposals). These guidelines relate to layout and content of Reviews. Some aspects of the content guidelines fulfil requirement criteria for E.I.S.'s described below.

E.I.S.'s prepared within the State of Western Australia to fulfill Federal Government requirements may be assessed by the W.A. Department of Conservation and Environment, but without adequate statutory standards, the assessment is likely to be arbitrary.

The system of E.I.S.'s was devised essentially with the following goals:

1. to enhance consideration of non-economic values.
2. to enhance public participation in the decision making process.

The first of these goals would seem to be attained by most recent E.I.S.'s. Yet, environmentalists are concerned that these recent Statements are no more than biological whitewash and justification for proposals already decided on (.e.g. Recher 1975). This effectively dissipates the energies of the environmental groups. Accordingly, they desire some guidelines by which to judge E.I.S. adequacy, in the hope that this will improve the role of the E.I.S. system to one where the Statements actually contribute to the amelioration of environmental impacts.

The second goal cannot be seen to be met by present Australian legislation (and W.A. legislation is non existent). The purpose of public participation is to enhance the probability of a socially desirable result. In W.A., access to the planning process under the E.P.A. Act is limited and the decision makers are free to ignore advice. Furthermore, as Garbesi (1975) points out, effective citizen action is circumscribed effectively by the notable lack of statutory standards in environmental matters. In contrast, under the U.S. National Environmental Policy Act of 1969, the public are given six months to comment on proposals, make submissions, and instigate public enquiries before any decision is made.

The following guideline proposal seeks to provide the necessary standards for citizen appraisal of E.I.S.'s. The guidelines are drawn from Westman (1973) and Conacher (1975). Essentially, there are two categories of requirements:

A. information which should be detailed in an E.I.S.
B. requirements for the preparation and assessment of E.I.S.'s.

A. E.I.S. Content

1. The E.I.S. should clearly outline all **environmental** impacts of the proposed project, including impact on alternative land uses (present & future). A quantitative assessment of the impacts should be provided, based on adequate scientific research.
2. The E.I.S. should state which adverse impacts cannot be avoided.
3. The E.I.S. should show clearly the relationship between short-term gains and long-term pay offs.
4. The E.I.S. should report on irreversible and irretrievable loss of resources.
5. The E.I.S. should detail all environmental safeguards to be applied, including monitoring and research into improvement of environmental standards.

B. Preparation and Assessment Criteria

6. The E.I.S. should be prepared by an independent body at the developer's expense (polluter pays principle).
7. Sufficient time should be allowed in the planning of the project for gathering adequate quantitative data and for adequate environmental and ecological research.
8. The E.I.S. should be readily available (and inexpensive) for public evaluation and input before any decision is made.
9. There should be an E.I.S. quality evaluation body to judge the adequacy of the E.I.S. (similar to the U.S. Council for Environmental Quality).
10. The whole proposal should be assessed by an independent body, which would

recommend:
a) if or not the project should proceed.
b) in what form the proposal should proceed.
c) further public safeguards necessary.

11. Where possible, cumulative effects of all regional proposals should be considered.

Whilst the E.I.S. system leaves something to be desired (Westman 1973), it has the potential to improve environmental aspects of development projects. The present lack of standards detracts from the system (Garbesi 1975), and leaves it open to manipulation. In the absence of the necessary standards, and any E.I.S. evaluation body, the guidelines proposed here may provide a yardstick for public evaluation of Environmental Impact Statements.

The Environmental Impact Statement for the Woodchip Project, prepared by the Forests Department of Western Australia, may be evaluated using the guidelines laid down here. Three points must be made at the outset:

1. The E.I.S. was not utilized during the decision making process (see Chapter 1).
2. At the time of preparation (and assessment) of the E.I.S. some confusion existed as to what an E.I.S. should be (E.P.A. 1973).
3. Even in the light of this confusion, the E.P.A. expressed some concern over the general lack of environmental information available (in the E.I.S.). Because the decision had already been made, the E.P.A. felt powerless to stop the project on environmental grounds (E.P.A. 1973). In reality it could have taken further action about the change in woodchip quota from 508 024 tonnes (1969) to 680 720 tonnes in 1973.

Turning to an examination of the E.I.S., the haste of preparation of the document immediately becomes obvious. Little quantitative data are presented and no real attempt is made to quantify any environmental changes which may accompany woodchipping. The little data which is presented (e.g. an incomplete list of animals in the area) is a hasty compilation of existing information, rather than being the results of a specific study in the license area. In fact, as Conacher (1975) reveals, there was no time for study. The Forests Department commenced their environmental impact study in May 1973 believing that they had up to 18 months in which to carry out research. After 4 weeks they were told to complete the study within a further 2 weeks.

It may of course be suggested that the Forests Department has known about the possibility of the establishment of a woodchip industry for some time (see Jacobs 1974) If this is the case, they may be seen to be exceedingly irresponsible for not carrying out any environmental study during that time. Under the requirements of the Working Plan system, forest management planning should be prepared 10 years in advance (Forests Act 1918-1974). Furthermore, the decline in the quality of the timber resource following 'highgrading' (see Chapter 2) virtually preempted any decision to change exploitation policy, and this must have been recognized by foresters long ago.

Similarly, had the E.P.A. been a little more forward thinking in realizing a woodchipping project was pending, it could have initiated some research into areas where now so much uncertainty lies.

Clearly a pilot project of reasonable proportions could have been carried out by the Forests Department (prompted by the E.P.A.) some years ago. Studies could also have been made of impacts of other Australian woodchipping projects (e.g. in Tasmania).

In the E.I.S. some attempt is made to disguise the uncertainties through the use of partial language – it would happen anyhow; and talk of 'acceptable level .. short term risk'. The fact that other researchers (e.g. Conacher 1975) suggest this superficial assessment of environmental deterioration to be wrong emphasises the general bias with which the E.I.S. is prepared. The judgements appear to be made on the basis of no evidence of damage – and no effort is made to collect evidence, while some may even have been neglected (see Studies in the Hubbard Brook Experimental Forest by Bormann, Likens,Pierce *et al*). As Routley (1974) says: "If projects are to be allowed to proceed merely because, on the basis of inadequate work, there is no evidence of damage, it is clear that the approach to proof, evidence and decision involved is methodologically unsound. E.I.S.'s accepted on such a basis will be virtually worthless. What is required, of course, is that there should be evidence of no damage which involves work to establish

effects and is rather harder to obtain than 'no evidence of damage'. Further, "Monitoring of the effects of the destruction of the forests is hardly likely to reduce the impact". In this case, the escape clause (Schedule for Forest Produce (chipwood) License, Clause 9) allows for excisions from the woodchip license area for environmental and other reasons, without compensation, but not for any reduction in woodchip weight.

In the face of this major inadequacy (viz lack of quantitative impact assessment) the failings of the E.I.S. with regard to the other content criteria can be seen.

That criteria 2–5 from above have not been satisfied is a reflection of the inadequacy of the basic data. Unavoidable impacts cannot be specified. The relationship between the long term and the short term cannot be quantified, the permanency of the loss of resources cannot be known, and monitoring and research could be totally inadequate. The E.I.S. is little more than a summary of some existing knowledge, written with prejudice, and expressing little but pious hope.

With reference to Criteria 6-11 from above, relating to Preparation and Assessment of an E.I.S., the woodchip document is again seen to be wanting.

The E.I.S. was prepared by an "interested" and non-independant body at the public's expense. Insufficient time was allowed for collection of adequate data on environmental impacts. The E.I.S. was not made readily available to the public and other expert bodies (e.g. C.S.I.R.O. and the W.A. University) (see Conacher 1975) until well after the final decision making was completed. Evaluation of the E.I.S. was made on a rather ad-hoc basis without proper guidelines for assessment and no effective action was taken regarding the lack of useful content. In addition, the terms of reference for preparation and assessment were far too narrow in considering only the woodchip project for 15 years. The project may be expected to extend beyond this time "to ensure farming of the forests in perpetuity" (The West Australian 17.10.73) and the agreement included investigation of the establishment of a pulp mill.

Thus we see in the E.I.S. a document which does not satisfy any of the necessary criteria – in effect a gimmick to lull the public into a feeling of false security, thinking that the environmental aspects of woodchipping have been adequately considered.

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(The proceedings of a recent symposium *The E.I.S. Technique* published by the Australian Conservation Foundation, (1975) provides further general information on E.I.S.'s).

Appendix 2: The Physical & Biological Impacts of Woodchipping

Impacts of the wood chip industry on the natural environment can be considered within five generally interpendent areas:

1. Soil erosion and nutrient loss, together with compaction, resulting in soil impoverishment and decline in general plant viability.
2. Increase in stream and surface soil salinity.
3. As a direct consequence of 1 and 2 above, the degradation of the stream and estuarine environments within and beyond the license area.
4. Accelerated spread of the dieback pathogen *Phytophthora cinnamomi.*
5. Immediate destruction of forest wildlife (the term which includes plants) with permanent loss of the present degree of diversity.

1. The nature of the logging procedures, local topography and soil types will combine to produce massive soil erosion and nutrient loss. This conclusion is inescapable in the light of evidence available. A recent study of the area (Valentine, 1974) reports:

> *"Where slopes of 7° to 9° occur on the red earths under Karri forest there is a strong possibility of lateral (downslope) subsurface water movement during winter and spring. These areas are also subject to surface runoff which results in rilling and sediment transport during at least the first seven years after the regeneration burn".*

Valentine (1974) estimates that "modal valley side slopes on Karri sites are in the order of 8° to 9°" and "approximately 50% of the land surface in the Pemberton area has slopes in excess of 6°". It is likely that "loss of nutrients following clearcutting and burning will occur on slopes as low as 7°". The C.S.I.R.O. (1975) have recently described the Karri-Marri forested regions as being characterised by "deeply incised valleys, steeper slopes, red earths and podzolic soils". Jarrah-Marri forest generally occurs on upland regions with gentler slopes and therefore will be less of a problem with regard to soil erosion (and nutrient loss, etc.) though one must be careful not to underestimate this. Soils of granitic origin (as are podsols and laterites) generally exhibit the greatest erodibility (Wallis & Willen 1963). However, these lateritic soils on which the Jarrah-Marri forests grow present many problems of their own e.g. lateritization — hardening. by exposure to the sun — so that regeneration of ground cover may be hampered by mechanical resistance to root penetration.

Valentine (1974) shows that regeneration after clear-felling of the Karri forest is often patchy, with numerous snig tracks remaining after at least three years. Most bare areas are on slopes and are usually very compacted. An aerial photograph of a site three years after the regeneration burn (Valentine, 1974, Plate VII) shows a pattern of bare compacted soil over 8% of the area which had been clear-felled (4.8% heavily compacted being loading areas, 3.2% less compacted being roads and snig tracks). This is similar to the pattern observed at Eden, N.S.W., where 5% of the land surface was compacted (Routley, 1974).

In their study of forestry practices in the Hubbard Brook Experimental forest, New Hampshire, U.S.A., Bormann *et al* (1968, 1969) found that, following clear-felling, the rate of soil erosion increased 50 times. Importantly, the clays and organic material erode first. These are normally the sites of cation exchange and bind the nutrients in the soil. Boughton (1970) also notes the dangers of clear-felling and states:

> *"A continuous cover of mature forest is probably the best protection a water supply catchment can have to minimise erosion and turbidity".*

Soil erosion will be exacerbated by the movement of vehicles during the logging operations, and by the fact that the soil may lie bare for several years (a period of up to five years or more may elapse between clear-felling and the regeneration burn). The precautions which the Forests Department proposes to minimise erosion will do little to solve this problem (Routley 1974, Conacher 1975).

Nutrient status is the most serious (and less readily apparent) soil quality which will deteriorate following clearfelling. This is of particular importance in areas of poor soils (e.g. as in the license area) as it may reduce the viability of the ensuing forest and may, in time, alter the understory composition and diversity (as happens in sclerophyllous heaths, see Heddle & Specht 1975). Valentine (1974) states:

". . . doubt exists as to the adequacy of nutrient levels for optimum growth, particularly of younger forests. Nutrient deficiencies need not necessarily manifest themselves in declining growth, but may render plants more susceptible to disease".

Much of the nutrient supply is locked up in the standing biomass of the forests which will be harvested (the nutrient-rich bark, for example, will burn at the chip mill – W.A. Forests Dept., 1973). Further, Bormann *et al* (1968, 1969) show that following clear-felling, nutrients are rapidly removed from the soil during rain. In a before and after comparison of nutrient levels in streams arising from the clear-felled area, the following increases in nutrient losses after clear-felling were noted:

NO_3 ..... 418%
Ca^{++} 900%
Mg^{++} 800%
Na^{+} 300%
K^{+} 2000%

Valentine's (1974) data show a similar trend of nutrient loss (see Conacher 1975). This loss was found to reach a peak after 7-17 years after which the accumulation from leaf litter and other sources began to exceed continuous losses via water carriage. The data indicate that nutrient levels may not return to original values after even 100 years.

The effects of nutrient loss (and deterioration of other soil qualities) is exacerbated by large coupe size, as the ameliorating edge effect per unit area is reduced. The Karri forest will be clear-felled in coupes of up to 200 ha (500 acres) while the Jarrah forest will, in effect, be clear-felled in coupes of up to 800 ha (2000 acres) – effectively the largest coupes of all Australian woodchip projects (see Report of the joint working group of the Australian Departments of Environment and Conservation and Primary Industry, Table 2). Alternative felling techniques such as strip-or patch-felling can reduce loss of nutrients (for strip-felling, Diamond 1975). Regeneration of the Karri forest by present techniques involves a hot summer burn to provide a suitable "ashbed". This ashbed, containing many of the remaining nutrients, will be exposed to the heavy rains of the following winter. Absence of the forest cover will increase runoff by 30-50% (Forests Dept., 1973), effective precipitation will increase since the leaves intercept from 10-15% of the annual precipitation (Forests Dept., 1973); the combined effect will be to promote flooding and related problems as the watercourses experience greatly increased through-flow and sedimentation.

2. Salt increase in surface soil and water is now a widely recognised problem in the lower rainfall areas of the State (e.g. Williamson, 1969, Morrissy, 1974). The most common objection to suggestions of salinity increase following activities associated with the woodchip industry is that much of the license area falls within the 1000 mm and above rainfall belt, where it is claimed flushing is adequate. At best it can only be said that a good deal of uncertainty still exists as to whether or not this is so. Factors more complex than mere rainfall are involved. That this uncertainty exists reflects on the inadequacy of environmental research, particularly as reported in the Environmental Impact Statement (Forests Department 1973). Recent reports (Trotman 1974, CSIRO 1975) have done little to reduce the uncertainty. It can only be seen as a poor reflection of the parties involved in the decision making process, that these reports only became available after the project was agreed to, rather than having been prepared as part of a long-term study before the agreement was signed.

Even in the light of this uncertainty, the following points can be made:

I As outlined in Chapter 2, the rivers with catchments in the wood-chip license area, taken together, form the most important surface water resource still undeveloped in south-western Australia. (see also CSIRO 1975). It may be necessary to utilise some of this resource within the next 15 years.

II Over 85% of all water used in the State is derived from forested catchments.

III. Hydrological changes in the soil following clearing give rise to saline run-off even in some higher rainfall areas. Clearing in Warren River catchment will increase salinities in that river (Forests Dept. 1973) and salinity problems have been observed in other high rainfall areas. (Conacher 1975).

IV The soils of between 60 to 80% of the license area have characteristics associated with salinity problems (E.P.A. 1973). Recent tests (CSIRO 1975) confirm the potential for salinity problems associated with the lateritic soils, while suggesting that potential to be less with the red earths.

V The time for return to hydrological balance following regeneration has been variously estimated at from 5 to 20 years (CSIRO, 1975, Hopkins 1973). It seems likely that, considering the time between clearing and actual regeneration (up to 5 -6 years with the intermittant Karri seeding) and the reduced overall foliage cover through soil deterioration, that 20 years could be a conservative estimate of the time taken for evapotranspiration to return to previous levels. Coppicing of Jarrah may return the balance more rapidly, though with the planned heavy thinning, the specially adapted root systems of Jarrah (Shea *et al* 1975) may not be sufficiently effective.

In view of the uncertainty which still exists, it would seem wise to maintain a control area as recommended in this submission, while continuing an assessment of the problem. The actual magnitude of the stream salinity increases which would make the waters unpotable is small, so changes required to bring about a loss of resource need only be subtle.

3. As described above, it seems certain that a loss of soil and nutrients will occur in clearfelled areas. The soil particles and nutrients will be carried into the watercourses causing increases in stream turbidity and some eutrophication. The increase in organic deritus in the streams as a result of the clearfelling will increase the Biochemical Oxygen Demand and cause further eutrophication. These together with possible increases in stream salinities will contribute to the decline of the water quality in the streams which have their catchments within the woodchip license area. Problems may be exacerbated by the use of herbicides, and the use of fertilizers when regeneration fails (see Forests Dept., 1973 Attachment 7 for some details of herbicide and fertilizer use). The possibility that leached nitrates will rise to toxic levels in watercourses (see Bormann *et al* 1968, Tamm *et al* 1974) warrants further study.

The Forests Department in their Environmental Impact Statement, suggest that a system of forested corridors (200 metre wide strips) to be left along watercourses will act to preserve stream water quality. The term "watercourse", as used, relates only to significant or major watercourses, and does not include 'streams' as defined in the Forests Act. As the following diagram (p.6.4) clearly shows, this system of safeguards will not affect any of the lesser streams which will carry the silt, nutrients and detritus into the major ones. These forested strips could not reasonably be expected to preserve water quality.

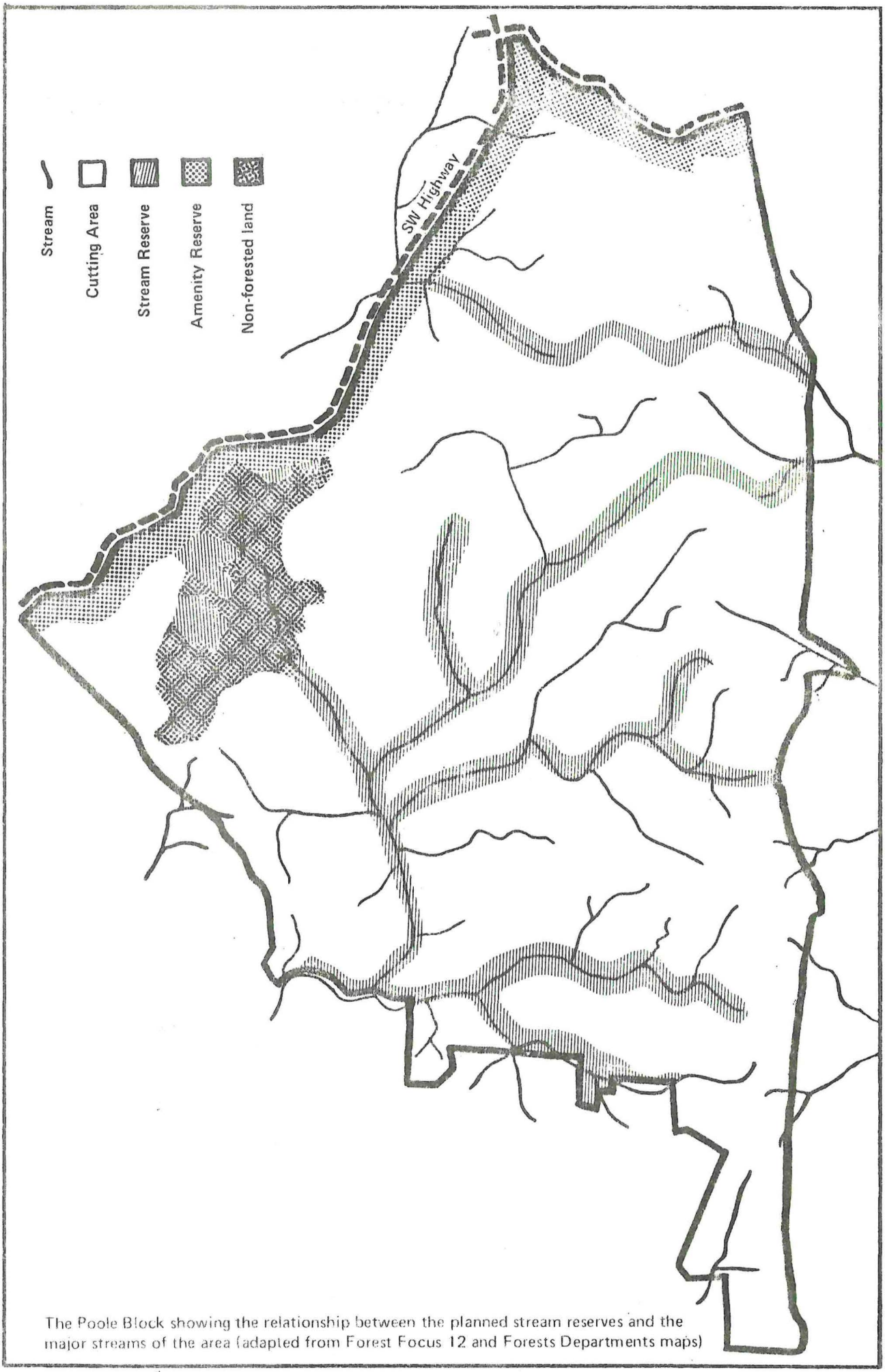
The presence of excess silt, nutrients and organic deritus in the watercourses would cause sedimentation in the streams and estuaries (e.g. Broke Inlet), excessive algal growth and general decline of stream biota (including recreational fisheries). Changes in the pattern of waterflow may further affect the stream biota. The sedimentation, at least, may not halt after regeneration of the cleared areas:

"However, rills and gullies, once initiated can continue to develop even under forest vegetation, particularly if through-flow is involved; and sedimentation of streams, including the infilling of fish breeding ponds and any watersupply dams which may be constructed in the future, is very much a long term possibility". (Conacher 1975).

The loss of water quality may be permanent. The most disturbing thing is that the fresh-water environment is probably the least understood of all the natural systems in the southwest.

We don't know what we may be destroying.

4. The Forest's Department, in the Environmental Impact Statement, clearly outlines the effects of the woodchip industry on the spread of "dieback":



The Poole Block showing the relationship between the planned stream reserves and the major streams of the area (adapted from Forest Focus 12 and Forests Departments maps)

> *"Dieback is already present throughout much of the woodchip license area and the extensive operations envisaged with much movement of heavy machinery will undoubtedly ensure its spread throughout the JM type of area . . . Not only will the rate of spread be increased, but temporary rises in the water table after tree removal will result in a longer period favourable to infection during spring . . . The result will probably be a severe reduction in the Proteaceae and other susceptible species, particularly in gullies and other low-lying areas . . . Jarrah dieback is a major problem. In the long term this will result in the destruction of a large proportion of the native flora within the JM type. This destruction is inevitable whether or not a chipwood project is introduced. Chip log extraction will merely hasten that process".*

It seems indefensible for the Forests Department to spend so much time and money educating the public on the severity of the dieback problem (e.g. Shea 1975), and yet so little on research relative to the general importance of the pathogen while endorsing a project which will considerably increase its rate of spread. This endorsement seems to be based on a suggestion that the licence area is a low risk area. (e.g. Peter Kimber talking on "This Day Tonight" 23/7/'75), which is not consistent with Shea (1975) or Forests Department (1973) as quoted above. It seems likely that woodchipping will have a severe indirect effect on the Jarrah forest through the spread of *Phytophthora.* Karri is less susceptible to the effects of the pathogen, though not necessarily immune. Young Karri trees may be less resistant, while the resistance of older trees may reflect only the vigour of growth under optimum nutrient conditions and low inoculum levels (Veste 1974). As Valentine (1974) states, a reduction of the nutrient status of the soil following clear-felling may render the plants more susceptible to *Phytophthora* attack. At any rate the suggestion that the area is low risk is a value judgement, because it apparently neglects the susceptibility of the understory species. The responsibility of the Forests Department to conserve the flora (under the Native Flora Protection Act 1935-1938) is subjugated by the obligation to produce timber for woodchips.

The Forests Department's apparent attitude to the "dieback" problem both generally speaking and in specific reference to the woodchip license area is disturbing to say the least. The condonation of the woodchip industry effectively closes the options to control and eradicate the pathogen which the future must hold.

5. The importance of conservation of viable samples of all major ecosystems, and the inadequacy of present forest conservation reserves in Australia, and particularly in Western Australia are discussed in Chapter 2 of this submission. Wetter forest ecosystems are now in most urgent need of better conservation.

As with many of our ecosystem types, little is known of the functional interactions, let alone composition:

> *"The extent of our ignorance of these (Biological) resources is remarkable. The basic problem is simply to secure an inventory of the fauna and flora and its distribution over the continent in relation to habitat. We are informed that the mammals and birds are already for the most part named and described but much still needs to be established about their distribution. The other vertebrates (reptiles, amphibia, and fresh water fishes) and the flora are much less well known; undoubtedly a great many species are still to be discovered and described. In the invertebrates the situation is chaotic, with probably at least half the species unidentified. Among the insects alone it is said that something like 50,000 species just cannot be mentioned in any account of the environmental ecosystem because they have no accepted names. Yet, insects, just because of the large number of species and the ease with which they can be sampled are particularly sensitive indicators of environmental differences. Collecting on a massive scale is part of the answer but the main requirement is a major taxonomic effort, using both existing collections which are still largely unstudied and the new material to be brought in". (Report of the National Estate 1974,* 3.37)

Furthermore, of those wildlife species which are known, the future may be uncertain:

"Many native species have declined over the past 200 years. The factors mainly responsible are associated with the advent of white man. Habitat destruction by clearing, the effects of pollution and predation and habitat alteration by grazing animals, have been among them. Wildlife conservation is generally dependent on the survival of suitable habitat which for many species is rapidly disappearing". (Report of the National Estate 1974, 3.33).

Yet, despite this obvious lack of knowledge the Forest Department, through its woodchip project, is undertaking actions that will drastically alter the ecosystems and throw this delicate balance between the living and non-living sections of the forest into possible turmoil, e.g. clearfelling removes mature and over-mature trees of importance to wildlife.

The flora and fauna of the southwest forest of W.A. is unique. At present a major part of this appears to be under threat from massive and irreversible damage following intensification of land usage through activities such as woodchipping, pine planting, bauxite mining and agriculture. Recognizing the impact of these activities particularly woodchipping, on the forests, the House of Representatives Select Committee on Wildlife Conservation (Report of 1972) recommended:

that before further native forest is set aside for woodchip purposes surveys be carried out to assess the value of such areas for wildlife conservation".

Subsequently, the conservation status of forest ecosystems of Western Australia has been investigated, and found to be inadequate. Specht *et al* (1974) describes 13 major plant communities of the Southwest dominated by Karri, Marri or Jarrah. Of these, only one category is considered adequately conserved in the present reserve system.

The Conservation Through Reserves Committee also examined the existing system of reserves throughout the State, and recommended additional areas for reservation where conservation needs were seen not to be satisfied. In particular, the Karri forest, of which all but a minute proportion lies within the present woodchip license area, was to be inadequately conserved, especially in view of possible changes associated with the woodchipping. The committee recommended the excision of the Shannon River Drainage Basin from the woodchip license area, at least until the effects of clearfelling elsewhere can be observed, to cater for present and future conservation and recreation needs in the State. The reservation of this area would certainly improve the conservation status of some of the 13 Karri, Marri and Jarrah associations in the Southwest.

That the forest ecosystems are presently inadequately conserved is of immense importance at a time when the conservation value of State Forests can be expected to decline rapidly. Woodchipping must surely have a profound longterm effect on the fauna and flora of these forests. The Forests Department does admit drastic short-term destruction of fauna and flora:

"Felling and burning produce and inhospitable habitat within the coupe with the result that fauna within the area are removed. Some small mammals such as rodents and marsupial mice, some of the birds of the undergrowth such as wrens, and reptiles and amphibia survive the felling operation and adapt to the new environment. However, after the burn these too may disappear as the open areas offer no protection from predators.

Very few animals are able to live on bare burnt areas and few of those species that lived there formerly are able to adapt by moving to nearby uncut forest areas. Studies on native rodents and small marsupials have shown that although they survive logging or fire, they are somehow not able to transfer their home range to nearby unburnt and uncleared land, thus falling easy prey to predators". (Forests Department, 1973).

However, despite the Forests Department's apparent lack of concern, and their assurances that the effects will only be short-term, they give no clear documented evidence to support these assertions, as of course they are unable to do until sufficient research is carried out.

Immediate destruction of wildlife will proceed at the rate of clear-felling. The long term

effects of woodchipping on the wildlife are more difficult to quantify. The Forests Department (1973) estimates depletion of population of many species by 90% while others may only be depleted by 80%. Such figures seem to be based solely on the overall percentage of land uncut and thus represent an oversimplification. The proposed reserves do not cover a wide range of habitats, topographies or plant associations. Furthermore, much of the reserved area will be largely ineffective in ameliorating impacts on wildlife. Stream reserves will compose some 8% of the license area or more than half the area to remain uncut. These proposed stream reserves (and the few 'road reserves') will have little conservation or environmental value. They will not preserve water quality (and thus will not conserve stream biota); it is impossible to maintain water quality via stream reserves alone because the whole catchment is a drainage system. A long narrow (200m wide) strip of vegetation is inherently the worst possible design for a reserve and will be ineffective as such (due to the low area to perimeter ratio). These areas may be useful migratory corridors, but many of the faunal species are territorial and non-migratory. The reserves will cover a restricted habitat type (low-lands and gullies), will be subject to rapid deterioration by virtue of design, will be threatened by woodchipping activities such as fire, are the areas most prone to *Phytophthora* infection and damage by salt encroachment, and will be control burnt shortly before the not regeneration burn of the clear-felled areas.

The value of cutover areas for wildlife must be considered. As areas regenerate, recolonization can take place. Of the processes of this, little is known, except that generally recolonization cannot take place faster than habitat regeneration. Some studies on effects of control burning in forests of the Southwest (e.g. Christensen & Kimber 1975) show that, following burning, recolonization takes place slowly. However, clearfelling is much more habitat destructive than control burning. For example, of the known marsupials of the Karri-Marri forest, five species require dense undergrowth, five species require holes in logs and trees, and one species requires flowering trees and shrubs. These types of habitats take various lengths of time to redevelop after regeneration of the forest begins. Dense undergrowth may develop within five years, but log litter and tree hole habitats take 25 years or more to develop. A flowering association of trees and/or shrubs may regenerate after 5 years. (In the Jarrah forests, the understory may not adequately regenerate in 30 years following intensive cutting. A.J. Conacher pers. comm). If cutting continues at the planned rate for over 30 years, some of these habitats will virtually disappear within the license area. Habitat regeneration beyond this time will coincide with the second cutting cycle and thus may be restricted. This suggests a very severe long term depletion of marsupial populations within the area. The extra time required for the development of complex ecosystem structures (e.g. food chains, etc.) and the possibility of some regeneration failure will exacerbate these depletions. Populations of birds and other vertebrates may be similarly affected. Further, the cutting of contiguous forest blocks as planned (Forests Dept. 1973, Attachment 4) within the habitat regeneration period will reduce the potential for invasion and recolonization, and thus the value of many cutover areas for the preservation of wildlife species.

Hitherto, the direct effects of the woodchip proposal have been predicted. There are, in addition, some likely indirect effects which will further deplete the wildlife value of the license area and beyond. Foremost of these is the spread of *Phytophthora cinnamomi.* The rate of spread of this pathogen will be considerably accelerated by the activities associated with woodchipping (Forests Dept., 1973), resulting in the further destruction of much of the area's wildlife resource. Jarrah and much of its understory, Banksia woodlands and Dryandra heathlands are examples of associations which may be destroyed. A consequent depletion of faunal populations can be expected through loss of habitat and food resource.

The Forests Department has presented a persuasive argument that regeneration will always occur following clear-felling (F.D., 1973). They have had some success with Karri regeneration on smaller coupes than those proposed for the Wood Chip Project, which probably received greater supervision and control than has been or could be employed in a large scale operation. Dangers of obtaining inadequate regeneration increase with the coupe size (Jacobs, 1955) and have been experienced elsewhere. (Routley, 1974). It should be noted that Karris require a minimum area of only 0.16ha for successful regeneration (Forests Dept., 1965). The W.A. Forests Department has admitted to the possible need for hand planting following failure of natural regeneration (Oldham, 1975).

The likelihood of wildfires will be increased through the woodchipping activities. The regeneration burns will be applied in summer, and although the Forests Department has

considerable expertise in fire control, the likelihood of some escapes should not be ruled out. Frequent burning has the effect of selecting against those species of plants and animals which, to maintain viable populations, can tolerate only a much lower frequency of fires.

The increased occurrence of introduced animals (house mice, cats, foxes, rabbits) and plants (annuals and the woody *Acacia dealbata)* as foreshadowed by the Forests Department in the E.I.S. constitutes a further disruption to the ecological balance in the woodchip license area.

The impact of woodchipping on the wildlife of the license area seems likely to be severe. Whilst the permanency of this impact depends largely on the level of woodchipping activity beyond the first 15 years, even this initial license period will allow serious depletion of a unique fauna and flora.

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Appendix 3: The Power of the Woodchip Lobby

In the main body of the submission we have documented the manner in which successive Western Australian Parliaments and Governments have failed to uphold general community interest by approving the wood-chip project to the detriment of Multiple Usage of Western Australia's native forests. The responsibility for the public interest has fallen upon academics and conservation and environment oriented groups. These groups are opposed by business interests which are so powerful that we believe a rational assessment of general community needs cannot be made within Western Australia's present political structures.

The groups which stand to benefit from the project have been outlined in the submission and generally speaking their interests are furthered by the directors of the companies involved. The directors of the two principal parent companies constitute a group with a large vested interest in the present scale of the wood-chip project. This group includes all the directors of the W.A. Chip and Pulp Co. By examining the other positions which these same individuals hold, we have an indicator of the extent to which they exercise power and influence in the business and government spheres of the community.

TABLE 1

Directors of Bunnings Timber Holdings and Millars (W.A.) Pty. Ltd.

Bunning, C.R. (C.R.B.)*	Hugall, C.B. (C.B.H.)
Bunning, G.M. (G.M.B.) *	Ireland, R.D. (R.D.I.)*
Bryant, B.W. (B.W.B.)	Kuba, I.C. (I.C.K.)
Donald, J.A. (J.A.D.)	MacArthur-Onslow, D.I. (D.I.M.O.)
Downing, E.F. (E.F.D.)*	MacQuaide, C.D. (C.D.M.)
Drybrough, C.D. (C.D.D.)	Payne, W.E. (W.E.P.)
Garrat, G.R.M. (G.R.M.G.)*	Stow, Q.R. (Q.R.S.)
Gascoine, L.R. (L.R.G.	Zink, D.W. (D.W.Z.)

* Directors of the W.A. Chip and Pulp Co. Pty. Ltd.

TABLE 2

Organisations in which Individuals in Table 1 have or have held influential positions

Name	Source of Link
(1) Commercial Enterprises	
Australian Fixed Trusts (W.A.) Ltd.	Q.R.S., Director.
Australian Mutual Provident Society*	G.M.B., Member of W.A. Board.
B.P. Refinery (Kwinana) Pty. Ltd.	L.R.G., Managing Director.
Bain Dawes W.A. Pty. Ltd.	J.A.D., Director.
Barr Walter and Co.	W.E.P., Director.
Bell Brothers Holdings Ltd.	L.R.G., Director.
British Petroleum Co. of Aust. Ltd.	G.M.B., Director.
Denzil MacArthur-Onslow Pty. Ltd.	D.I.M.O., Director.
Fish Protein Concentrate (Tas.) Pty. Ltd.	G.M.B., Director.
	D.W.Z., Director.
Gold Estates Australia Ltd.	C.B.H., Director.
Greater Pacific General Insurance Ltd.	W.E.P., Director.
H.D.H. Holdings Pty. Ltd.	C.D.M., Director.

Hawker Siddley Brush Pty. Ltd.	C.D.M., Director.
Inchcape (W.A.) Pty. Ltd. Gp.	C.B.H., Director.
International Products Ltd.	W.E.P., Director.
Landall Holdings.	R.D.I., Director.
Lister Blackstone Pty. Ltd.	C.D.M., Director.
MacDonald Hamilton and Co. Pty. Ltd.	J.A.D., Director.
	D.I.M.O., Director.
National Mutual Life Association	C.R.B., Member of W.A. Board.
Peters Ice Cream (W.A.) Ltd.	G.M.B., Director.
Reserves and Mining Investments Ltd.	D.I.M.O., Director.
Seismic Supply International	D.I.M.O., Director.
Streetley Australasia Pty. Ltd.	D.I.M.O., Director.
Swan Brewery Co. Ltd.	C.R.B., Director.
Swan Portland Cement Ltd.	C.R.B., Director.
	E.F.D., Director.
	L.R.G., Director.
T.V.W. Ltd.	C.B.H., Director.
Timber Trade Mutual Insurance Ltd.	W.E.P., Director.
Town & Country Permanent Bld. Scty.	C.R.B., Director.
Vickers Cockatoo Dockyard Pty. Ltd.	G.M.B., Director.
W.J. Manufacturing Co. Ltd.	J.A.D., Director.

(2) Non-Commercial Private Organisations

Australian Timber Producers Council	C.R.B., Member.
Employers Federation of W.A.	C.R.B., President.
Liberal Party of Australia	E.F.D., former President.
W.A. Chamber of Manufacturers	G.M.B., Member.

(3) Statutory Bodies

Australian Industries Development Corp. *	G.M.B., Director.
National Parks Board of W.A.	C.R.B., Member.
University of W.A.	C.R.B., former Member of Senate.
Western Australian Inst. of Technology	D.W.Z., Dean of Bus. & Admin.
Zoological Gardens Board	C.R.B., Member

* Involved in the capitalisation of the W.A. Chip and Pulp Co. Pty. Ltd.

Appendix 4: This letter, which appeared as the editorial in Wildlife Australia Vol. II, No. 4, Dec. '74, states clearly why any enquiry into forest utilisation should take the form of a Royal Commission or a similarly constituted committee.

The Hon. E.G. Whitlam, Q.C., M.P.
Prime Minister,
Parliament House,
Canberra,
Australian Capital Territory, 2600.

Dear Prime Minister,

There has been in the last few years a growing alarm among conservationists with regard to the development of forestry practices, particularly in the direction of clearfelling prime forests for conversion either to chips for paper-making or to plantation forestry to increase the timber yield. This disquiet has culminated with the recommendations from the Forwood Conference. Though we have made a number of suggestions for improvement there still remains a number of basic problems. These refer in particular to the economic and ecological viability of clear felling.

As conservation groups we have been unable to obtain from the relevant State authorities information which would enable us to assess these matters. We do know that reports have been prepared and are not being released. We also know that economic assessment is impossible unless we are given information on the financial terms of contracts entered into.

We know that a Parliamentary enquiry into the forestry question is planned by your Government but such an enquiry would also be unable to acquire this vital data. Only a Royal Commission has the power to do so.

We feel there are two major reasons why a Royal Commission is essential in these matters, just as essential as the reasons which led to the Royal Commission on the Great Barrier Reef.

The first is that decisions made now, if ecologically not viable, would mean the destruction for all time of vast areas of our limited native forests. There will be no going back. These forests are not only a source of timber but have value in terms of wildlife conservation, watershed use, recreation in similar fashion to national parks and others.

The second point is that there is no urgency to make an immediate decision on clearfelling and increased exploitation of our forests. Most of the present contracts are for export of chips for paper making. Australia has adequate resources for her own use as well as being able to call on supplies of softwoods from New Zealand. Since there is no urgency, a moratorium should be called on all further chipmilling and clearfelling proposals until the Royal Commission findings have been delivered.

We have included rainforests in the terms of the Royal Commission since these have many uses apart from timber and need skilful handling to survive. We have in Australia the only country in the world which has the scientists, the computers and the background knowledge to train the under-developed countries of the tropical world how best to manage such rainforests in long term national interests.

For these reasons we respectfully request that your Government set up a Royal Commission whose terms of reference will include an examination of the destruction of Australian Native Forests with special references to:–

(a) clearfelling for conversion to plantation forests;
(b) clearfelling for chipmilling;
(c) exploitation of rainforests;
(d) whether these practices are in the national interest

We know your Government's deep concern for conservation and the retention of quality of life for all Australians. We emphasise that never before has there been such a threat to the survival of our forests as we know them. We are not pre-judging the case but asking that the best advice possible be sought before the various authorities take what is very likely to be an irrevocable step towards disaster.

Yours sincerely,
Len Willan,
CHAIRMAN
NATURE CONSERVATION COUNCIL OF N.S.W.