THE PARLIAMENT OF THE COMMONWEALTH OF AUSTRALIA

1975—Parliamentary Paper No. 115

House of Representatives Standing Committee on Environment and Conservation

Report on

The Operation of the Softwood Forestry Agreements Acts 1967 and 1972

Brought up and ordered to be printed 29 May 1975

THE GOVERNMENT PRINTER OF AUSTRALIA
CANBERRA 1976

Printed by Authority by the Government Printer of Australia

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1. INTRODUCTION

1. The Committee on 23 July 1974 pursuant to a request by the Minister for Environment, Dr M. Cass, resolved to inquire and report upon:

> The operations of the *Softwood Forestry Agreements Acts* 1967 and 1972 with particular reference to their environmental, social, and economic impact and make appropriate recommendations as to the form of any future Softwood Industry Agreements legislation.

Subsequently the Committee invited submissions from individuals and from organisations both private and public. A great deal of interest was aroused as can be seen from the fact that 67 written submissions were received, 52 of which were incorporated in the transcript of evidence. As well, 74 individuals gave oral evidence to the Committee in its public hearings, 12 of these representing companies connected with the timber industry in Australia. The remainder spoke as private witnesses, as spokesmen for some of the many interested conservation and professional groups, or on behalf of Government Departments.

2. Commencing on 7 November 1974, 12 public hearings were held, with at least one hearing in each State. Over 2200 pages of evidence were taken. The activities of each of the State forestry services were inspected, and, as well, a sub-committee visited New Zealand where similar inspections were made of that country's softwood industry. Extensive discussions were held with officials of all forestry services and with the representatives of companies whose plants were visited.

The need for the inquiry

3. The awakening community interest and concern in recent years at the way Australia's resources are being exploited and the way the country is being developed are apparent. This concern has been most clearly expressed where exploitation and development is seemingly detrimental to the environment. The existence of this Committee and the tasks it is asked to perform are but one manifestation of this growing consciousness.

4. Increasingly, all forms of development are being questioned as to their environmental effects, and the softwood planting program, as fostered by the legislation under review, is one such issue. The particular aspect that arouses concern is that large areas of Australia's native forest and all that it contains and represents are being cleared to make way for the establishment of exotic plantations. There is also considerable concern that this development is proceeding apace without adequate safeguards being taken and without proper research into the long-term effects of it, especially those which impinge on soil and water resources, both being natural assets with which this country is not well endowed.

5. Concern has been expressed by those who question the economics of extensive softwood plantings in Australia and by those who doubt their social value. The Committee's evidence contains well-documented statements by many such people.

6. On the other hand there are those in the timber industry who believe that the timber resources of Australia and those of some of our traditional overseas suppliers are being rapidly depleted. They see the need for Australia to protect itself against future shortages by embarking on an extensive program of plantation development using fast growing, highly productive softwood species suitable for a wide range of uses. It was this reasoning which was used in support of both the 1967 and 1972 Softwood Forestry Agreements Acts.

7. That is the conflict, and the problem to which the Committee has applied itself. It is obvious that any future legislation promoting the softwood planting program must be carefully examined.

8. There have been other inquiries into the management of Australia's timber resources, such as the Inquiry into the National Estate[1], and the Rural Green Paper[2]. The most important inquiry was that conducted in 1974 by the Australian timber industry, which in its FORWOOD Conference sought to assess Australia's timber resources, their development, their capacity, and the likely demand which they would have to satisfy.

9. Despite the views of its critics, the FORWOOD Conference represented a milestone in the industry in that it was the first major attempt to document Australia's assets of a resource upon which there is considerable pressure. All available data were collated on a nation-wide basis upon all facets of the industry, and working upon these data, an attempt was then made to chart a course for the future. Predictions for the future are open to debate and this had indeed been the experience of the Committee in this Inquiry.

10. The Committee's Report will attempt to be fairly representative of this debate. It hopes that by placing the issues in perspective a national approach to the future legislation can be reached. Due to the complexity of the problems connected with forestry and the paucity of knowledge on its environmental and social effects, this approach may appear to be cautious. It is hoped that by considering all the elements adverted to in this Report, that caution will be seen to be justified.

The Softwood forestry legislation

11. In 1964 the Australian Forestry Council was established, the present membership consist of the Australian Minister for Agriculture and the Minister for the Northern Territory, together with the State Government Ministers responsible for State Forest Services. Later that year the Council, in line with Government policy aimed at self-sufficiency in major industries, recommended that a total softwood resource of 1.2 million hectares (3 000 000 acres) should be established at the rate of 30 000 hectares (75 000 acres) of new planting per annum.

12. In 1967 the first Softwood Forestry Agreements Act was passed and gave effect to this recommendation by providing long-term loans on favourable terms to the States. This Act which was to run for five years was replaced upon its expiry by a similar Act in 1972, the only difference being modification of the areas to be planted.

13. The terms of the loans made to the States are that the money ($21m in total) is lent for a period of 35 years, the rate of interest being the long-term bond rate. No repayments or interest are paid for the first ten years. The basis of this concession is the time for the forest to make its first yield.

2. FINDINGS

14. The following is a summary of the findings of the Committee and the basis upon which its recommendations are made.

1. Report of the Committee of Inquiry into the National Estate, 1974.
2. Report to the Prime Minister by a Working Group, May 1974, 'The Principles of Rural Policy in Australia: A Discussion Paper'.

(i) Australia's timber resources are relatively small and should be conserved in the long-term interests of the nation.

(ii) There is a need for a softwoods planting program, possibly on a lesser scale than that planned at present.

(iii) Timber is a versatile, renewable material which compared with other building materials can be produced at lower costs, with far less use of our dwindling energy supplies, and with less damage to the environment.

(iv) There are many side effects of softwood forestry upon the environment which require more attention and care than are currently being given.

(v) Insufficient research is being conducted into the environmental hazards connected with the plantation of large areas of exotic trees.

(vi) The greater mechanisation of forestry activities has increasing consequences for the environment, especially where water quality is affected and where it enables the clearfelling of larger areas of native forest.

(vii) Insufficient research is being conducted into the effects upon flora, fauna, soil and water of the clearfelling of large tracts of native forest.

(viii) It is difficult to make valid generalised criticisms of softwood forestry practices because each State employs different policies and enjoys widely differing soil, climatic and topographical conditions.

(ix) Insufficient use is being made of marginal farmland in the softwood planting program.

(x) The regeneration and more effective utilisation of the nation's hardwood forests could be made, and require greater encouragement.

(xi) The present Softwood Forestry Agreements legislation does not allow for sufficient long-term planning by the State forestry services who are primarily responsible for the planting of exotic softwoods.

(xii) There is a need for greater flexibility in committing large financial resources to a long-term planting program, with regular objective scrutiny of the nation's needs.

(xiii) In most States there is a need for greater public participation in deciding the uses to which public land is to be put.

(xiv) There is a role to be played in the softwood planting program by private forestry interests provided they are subject to the same environmental safeguards as State forest services.

(xv) There is scope for the use of farm woodlots which should be supervised by State forest services.

(xvi) There is great variance between the States in guidelines set down for proper forestry management and procedures and in their enforcement.

(xvii) There is a rapidly growing public awareness of the value of native forests for scientific, educational and recreational purposes.

(xviii) Insufficient areas of Australia's native forests are being preserved or dedicated for use as National Parks or for the protection of biological resources. This is a matter of the utmost urgency.

(xix) Forestry and the timber industry are important elements in the decentralisation process and a substantial employer of manpower in rural areas where employment opportunities are limited.

(xx) Each State has differing needs for softwood planting based upon the extent of their own natural resources and their proximity to outside suppliers.

(xxi) New Zealand has both the capacity and the willingness to supply the Australian market according to the terms of the NAFTA Agreement.

3. RECOMMENDATIONS

15. *The Committee makes the following recommendations:*

(i) Immediate consideration should be given to providing financial assistance to the States for the regeneration of hardwood areas in a way that ensures the maintenance of forest diversity and other environmental values.

(ii) A thorough independent analysis of Australia's timber should be conducted, taking into account all the variables mentioned by the Committee, and in particular the added yield of the native forest which could be gained by more effective utilisation.

(iii) Australia's undedicated forests should be examined for their timber potential on a sustained yield basis and plans drawn up for their dedication as forest reserves.

(iv) It should be basic to any future Softwood Forestry Agreements Act that a thorough reassessment be made every three years to ensure that the area being planted does not exceed the real needs of the nation.

(v) Australian companies should be given greater encouragement and assistance by Government in securing long-term contracts for the supply of softwood from New Zealand.

(vi) Money should not be loaned to the States for the planting of softwoods in areas where native forest is to be clearfelled, except where a thorough and stringently supervised independent research program has been conducted into the flora and fauna of that area, as well as its soil quality, and where the planting plan allows for their protection.

(vii) Additional funds should be made available to the CSIRO and other relevant bodies for research into the many areas of forestry management about which so little is known.

(viii) Immediate steps should be taken to increase the funding for the comprehensive biological survey for the entire Australian continent.

(ix) An immediate study should be carried out by a body such as the Bureau of Agricultural Economics to determine the economic viability of the softwood planting program, on both strict financial grounds and on the broadest possible cost/benefit grounds.

(x) Requests for assistance by private interests should be referred to the Industries Assistance Commission.

(xi) All States should seriously consider the implementation of a land usage surveillance plan similar to the Land Conservation Council of Victoria.

(xii) An increasing proportion of the finance loaned to the States should be dedicated to the purchase of land already cleared for other marginal pursuits.

(xiii) Financial assistance should continue to be made available to owners of agricultural holdings for the planting of small woodlots on their properties.

(xiv) Plans for the plantation of exotic softwoods should be made available for public scrutiny. Full consultation and discussions should be held with interested parties before they are implemented.

(xv) Greater encouragement should be given by the Australian Government for the dedication of more extensive areas of Australian native forests as National Parks.

(xvi) The next Softwood Forestry Agreements legislation should cover a period of ten years, with interest accruing from the commencement of the loan, and with deferrment of repayments of instalments of principal and interest for fifteen years.

(xvii) Stringent conditions should be imposed upon the lending of Federal money to ensure that forestry management procedures designed to protect the environment are strictly observed.

4. AUSTRALIA'S TIMBER RESOURCES

16. During the course of this inquiry it became clear to the Committee that it could not examine the role of softwoods without examining the relative position of Australia's other timber resources. It is the lack of the latter which is used as justification for a softwood planting program in the first place. To this extent the Committee has gone beyond a strict interpretation of its terms of reference by examining the larger problem.

17. Australia has very little good quality forest for its size. Taking a most liberal definition of the term 'forest', Australia has less than 6 per cent of its land forested. Of this area 78 per cent is publicly owned, 35 per cent of which is permanently dedicated for timber production. Only 5 per cent of that publicly owned forest is reserved as National Parks. The scope for greater utilisation of our native forest is obvious, especially for the provision of dedicated, protected recreation areas within the network of National Parks.

18. It would be erroneous to conclude from these figures that Australia's timber resources are scanty. Australia has only a small population, the growth rate of which is declining considerably. The bulk of the dedicated forest lies along the eastern seaboard, a highly significant factor to be considered in the assessment of Australia's overall timber resources.

19. The arguments advanced in favour of the softwood program revolve around the predicted demands to be made on our native forests, the inability of those forests to satisfy demands, and what is considered in the timber industry to be an impending shortage of softwoods overseas. Associated with these arguments are notions in favour of self-sufficiency and of reducing the nation's import bill for timber products which currently stands at about $230m per annum. It is argued that there is a need to relieve the pressure upon the native forests, but ironically this relief is being obtained, in part, by clearing 2-3 per cent of that same forest for the projected softwood planting program.

20. These arguments have some merit, but there are weaknesses which, although not totally discounting the program, raise some doubts as to their validity. The Committee is unanimous in agreeing that while the planting program can be justified for some reasons, there are good arguments against any firm commitment to the level of planting currently envisaged.

5. THE EXTENT OF THE PLANTING PROGRAM

21. The evidence given to the Committee on the extent of the softwoods planting program was polarised, with representatives of the timber industry and Government agencies stressing the need to pursue the goals set by the FORWOOD Conference. This involves a planting rate of 28 500 hectares every five years until the year 2010. Conservationists urged caution, or even a moratorium, using environmental arguments, and stressed the need for greater rationalisation and research into almost every element upon which the planting program is based.

22. The level of planting has been dictated by Government policy in the past which encouraged Australian industry to be as self-sufficient as possible. With the aim of replacing imports the planting schedules were drawn up. With the aid of the *Softwood Forestry Agreements Act* 1967, planting commenced, and has continued unabated with the assistance of a further Act in 1972 which provides loan funds until 30 June 1976.

23. The doctrine of self-sufficiency is questionable and was discarded by the FORWOOD Conference as not being a rational basis for softwood planting. The risks and costs of such a doctrine in times of growing international interdependence and firm trade relations with other nations are fairly obvious. The Committee will not pursue them except to say that it sees great merit in co-operation in this particular resource on at least a regional basis. It believes that if there are countries which can produce timber more economically than Australia and which are willing to commit themselves to the necessary long-term contracts, then Australia would be foolhardy to invest in the development of its own resources when that money might be better allocated to other uses.

24. The Committee considers that before the goal of self-sufficiency is retained as a national aim and the basis on which future legislation is framed, there has to be a serious testing of the approach, and a thorough analysis of the availability of overseas supplies. This has not yet been done.

25. Attention has been drawn to surveys conducted by the Food and Agricultural Organisation and the United States Forest Service, in which estimates are made of future world timber supplies. These reports predict shortages of timber by the turn of the century, with the industrialised nations of America, Japan and Europe having growing deficits. Countervailing points were made of the larger timber-producing capacities of Canada, Scandinavia, and particularly New Zealand, all of which seem to have been ignored.

26. If the future world shortage is as real as predicted by some, there are still other uncertainties surrounding the size of the planting program currently proposed. Fundamentally they concern the predicted supply and demand levels in Australia within the next 25 years.

Demand

27. The central element in forecasting future demand for timber, is, like most commodities, level of population. This in turn is dependent upon two variable factors, the rate of natural increase and the rate of immigration. It is becoming fairly obvious, as Professor Borrie's recently completed study[1] confirms, that the rate of natural increase

1. National Population Inquiry, 1975.

is declining. Taken together with the reduced level of immigration it means that Australia's population will not approach the level of 19.1 million at the year A.D. 2000, the figure used by FORWOOD in drawing up its planting schedules. According to Professor Borrie, Australia's population is not expected to exceed a growth rate of 1 per cent annually, with the result that the total population will only be approximately 16 million.

28. This lower population will impose lower demands on timber, and until such time as Professor Borrie's study is rendered invalid by changing circumstances, the Committee believes that the planting rate should be amended accordingly.

29. The next important element in assessing future demand, and one as yet unclear, is the future per capita consumption rate. Several witnesses pointed to the American experience where, although living standards are comparable with Australia's, the per capita consumption rate is higher. Although the per capita consumption rate in Australia is lower, to base a future planting program on a dramatic increase in per capita consumption would be too speculative. Until more is known about future demands, the Committee urges a more conservative approach than that being taken at present.

30. If the rate of population increase is declining as Professor Borrie has found, then the pattern of consumption will change too, especially with relation to the demand for housing timber. There is probably less doubt about materials for packaging and paper and the demand for them may grow as fast as the population if not faster. It is hazardous to predict with accuracy, for as we know from the slump in the paper industry, demand does fluctuate. It would be unwise therefore to base future production upon past consumption peaks.

31. Beyond these two factors, the future demand for timber contains several independent considerations. One of these is whether raw demand ought to be strictly catered for, or whether actual real needs alone should be considered. Perhaps it is difficult to tell the difference, but the timber industry, in common with other industries, indulges in promotion which has the effect of encouraging demand in excess of normal levels.

32. Witnesses claimed that to promote the consumption of goods which are either undesirable in themselves, or because of the effect they have upon the environment, is morally reprehensible. Softwoods are no exception, and while it is acknowledged that timber is renewable it is also recognised that its production is not without its hazards or social costs.

33. Submissions to this inquiry have pointed out that a good deal of timber production is devoted to the production of disposable paper products and that this is an undesirable use of a resource which, although is not difficult to grow, is a long-term crop from which returns on the capital invested are delayed. Whether this element of demand should be fully taken into account when drawing up a planting program is a matter of some doubt. To exclude it is quite impracticable and the danger of having it compete with other demands such as building materials or fine writing papers is a real one.

34. This observation should not be taken as a Committee finding at this stage as the Committee proposes in the near future to conduct a separate inquiry into the packaging industry and its environmental effects. One factor that is clear is that without such an industry as the paper and packaging industry, forestry would be far less profitable.

Along with chipboard manufacture, it absorbs all the forest by-products, wastes and most importantly the thinnings which yield early returns.

Supply

35. There is no doubt that Australia's forests have had enormous pressures placed on them in the past and as a result of imprudent clearing a great deal of them have been permanently destroyed. This should not be allowed to continue and more needs to be done in restoring areas which have reached a stage of exhaustion where they are incapable of natural regeneration.

36. Currently there are two methods of restoring native forest where it has been destroyed by fire or by clearfelling. The first is to allow the forest to regenerate naturally with all its former diversity with little assistance, and the second is to actually plant one particular species of eucalypt as a minor form of native monoculture. The latter has more commercial appeal, but the Committee would like to stress that the retention of forest diversity should be paramount in any reafforestation program. More emphasis should be given to the restoration of native forests in their natural form, rather than in the form of a monoculture.

37. The FORWOOD Conference provided a valuable inventory of Australia's timber resources. It is possible now to evaluate the possible forest yield, and thereby how much softwood would be needed to supplement it. The Committee concluded that Australia's native forest yield must be supplemented by softwoods, but it was not clear just how much softwood plantation is needed to augment that already planted.

38. Because of the unknown quantity of some of the variables it is difficult to actually determine a level for future planting rates. No further planting may be needed at all, but until a thorough analysis is done, with predictions based on realistic criteria, then that figure cannot be suggested.

39. Several references were made during the inquiry to the attempts which have already been made to estimate accurately the availability of future supplies, the yield of our native forests and softwood plantations. The greatest uncertainty is the extent to which the production of native forests can be improved by greater utilisation and by technological innovation. During inspections of forests throughout Australia the Committee saw that there was a high degree of wastage, especially where clearfelling was taking place, and where the forest being cleared was of good quality. The Committee was told that the reason for non-utilisation of this fallen timber was one of economics, but it believes this is an attitude that might well change in different circumstances.

40. Wastage is present during processing operations, one estimation given to the Committee being that less than 35% of each tree milled reaches the market-place. Efforts are being made to make maximum use of every log, mainly by associating chipboard mills and pulp mills with the sawmills, and by improving the technology within the sawmills themselves. There will clearly be much improvement as these developments become more widespread.

41. While the Committee believes that our native forests can be better utilised, it also believes that other developments may contribute significantly to the local supply of forest products or influence demand. The most notable is the recycling of paper and paperboard products. If the current trend of recovery of this material continues to improve then the demand on the forest resource will be noticeably reduced.

42. The use of substitutes is also an important factor, and there are a multitude of examples where timber has been replaced by other materials. This trend is continuous and so it must be given serious consideration.

43. Experimentation has been conducted into the use of kenaf, a tropical plant suitable for northern irrigated areas, as a substitute for both hardwood and softwood in the production of paper. This research is continuing, as is the work into the use of the bagasse discarded in the refining of sugar cane. There are but two examples and while they may never come to fruition, it does indicate that substitution is not completely beyond expectation.

Overseas supplies—New Zealand

44. The argument was put to the Committee that New Zealand should be relied upon more heavily as a supplier to the Australian market. It was pointed out that the New Zealand—Australian Free Trade Agreement (NAFTA) is an ideal avenue for trade in a commodity of which New Zealand has an exportable surplus and which is in great demand in Australia. Timber is at the very basis of the trade agreement and with the trade imbalance in Australia's favour many witnesses have urged that the objective of self-sufficiency be discontinued.

45. To determine for itself whether New Zealand had the capacity and the willingness to supply Australia's future needs, the Committee visited New Zealand in April 1975. New Zealand is planting large areas of softwoods (110 000 acres per year) and the industry is organised so that maximum efficiency is being obtained. The country also has an ideal climate, good soils, and it seems minimal further damage to the environment is being caused. Much planting is being done on marginal agricultural land, upon non-productive land leased from the Maori people, and upon land whose forest has long since been destroyed or where the soil needs consolidating owing to excessive clearing in the past.

46. With large areas being planted and high productivity, New Zealand has great potential as a supplier of softwood products to the export market. Australia is seen as being foremost in that market and New Zealand companies and Government officials were keen to point out that they would welcome long-term contracts and favoured greater rationalisation of trade between the two countries. They stressed that an export of forestry products is a way of reducing New Zealand dependence upon other primary exports which are susceptible to fluctuations in price and for which overseas markets are uncertain.

47. Australia's planting program has been aimed at self-sufficiency by the year 2010. This policy is inconsistent with the New Zealand plans and the Committee regrets the apparent lack of compatibility of the future of trade relations of Australia and New Zealand in this commodity.

48. An unsatisfactory factor with timber products, and especially paper pulp, is that demand fluctuates substantially. The result is that there is a certain amount of trepidation on both sides of the Tasman as to whether substantial, long-term commitments ought to be agreed to. During the world-wide shortage of newsprint in 1973, for example, Australian companies were affected by the failure of New Zealand supplies, and with this memory fresh in their minds they appear a little wary of closing their options. Those options are quite good in 1975 with supplies being available from North America and Scandinavia at competitive prices. A restrictive commitment to New Zealand would mean that some of that advantage would be lost.

49. As far as New Zealand is concerned, while the manufacturers see advantage in long-term commitments at stable prices, they are aware of their strength in possessing large stocks of a resource which may be in increasing world-wide demand. The advantages in keeping some options open are clear.

50. Because of this trading uncertainty the self-sufficiency doctrine remains attractive to the Australian timber industry. The Committee feels that this is an irrational goal if the cost to Australia is so much higher, both in financial terms and in terms of environmental disadvantage.

51. There is a fair degree of co-operation and specialisation between some Australian companies and their New Zealand counterparts but the Committee believes that it is unfortunate that more Australian companies do not show greater willingness to secure supplies of timber from New Zealand.

52. The Committee therefore makes the following recommendations on the extent of the future planting program:

(i) Immediate consideration should be given to providing financial assistance to the States for the regeneration of hardwood areas in a way that ensures the maintenance of forest diversity and other environmental values.

(ii) A thorough independent analysis of Australia's timber should be conducted, taking into account all the variables mentioned by the Committee, and in particular the added yield of the native forest which could be gained by more effective utilisation.

(iii) Australia's undedicated forests should be examined for their timber potential on a sustained yield basis and plans drawn up for their dedication as forest reserves.

(iv) It should be basic to any future Softwood Forestry Agreements Act that a thorough reassessment be made every three years to ensure that the area being planted does not exceed the real needs of the nation.

(v) Australian companies should be given greater encouragement and assistance by Government in securing long-term contracts for the supply of softwood from New Zealand.

6. THE ENVIRONMENTAL HAZARDS OF SOFTWOOD FORESTRY

53. It is conceded by the keenest proponents of softwood forestry that there are some environmental drawbacks associated with plantation establishment and harvesting. They properly point out that other building materials and the substitutes mentioned in the previous section involve environmental costs of a more adverse nature which exceed those connected with forestry. As a building material particularly, timber is versatile, renewable, easily managed, strong, can be easily converted and, most importantly of all, entails minimal use of energy in its production. Further, it is bio-degradable, a valuable attribute in these times when waste disposal is such a problem.

54. The energy requirements for the production of other building materials such as cement, bricks and steel reveal that whereas the fuel cost as a percentage of material cost for timber is 3.5 per cent, the same percentages for cement, bricks and steel are 41 per cent, 67 per cent and 8.5 per cent respectively.

55. There are, however, some quite substantial effects of softwood forestry upon the environment which should not be allowed to continue unchecked. There have been many commentaries upon these in the past, including recent reports by the Inquiry of Mr Justice Hope into the National Estate[1], and the House of Representatives Select Committee on Wildlife Conservation.[2]

56. The Committee found it hard readily to grasp the complexities and implications of these environmental hazards. It is easy to say that only a very small percentage of the native forest is being transformed to softwood culture (2-3 per cent), that this is quite insignificant, or that the effects of soil erosion and pesticides occur only during the first few years. To look at it realistically one must also go beyond the planting program currently being considered, i.e. beyond A.D. 2010, to both new and second rotation planting programs, and make a serious attempt to assess the impact that the continual forestry activity will have in the very long term.

57. The lack of positive forward thinking from a multi-disciplinary viewpoint is, to say the least, unfortunate, for the stability of the Australian environment must be considered well into the next century. The effects of softwood foresty are cumulative and may well have effects upon the nation too complex to contemplate at this stage. Australia is already suffering environmental repercussions of past development where short-term gain has been given priority, and the excessive clearing along the country's major waterways is one example. Some of these rivers have become badly silted and the high salinity levels in others has made reafforestation a necessity. The Committee is concerned that that same lack of foresight still exists and that the long term is not being properly considered.

Fauna

58. When the Committee speaks of the effects of softwood forestry upon wildlife it refers of course only to those situations which involve the clearing of native forest in which that wildlife resides. As with the other environmental problems associated with softwood forestry, relatively little is known about these effects.

59. The wildlife which inhabits native forests can be placed in two broad categories, each with a varying degree of dependence upon the forest. The non-dependent species, as the adjective suggests, may survive in an altered habitat, they being primarily the more transient species which use the forests as a shelter such as birds, reptiles, kangaroos, wallabies and wombats. This group also includes the brush possum and to a lesser extent the ringtail possum. That all of these will survive the clearfelling of the forest is not certain but they have a better chance than those species in the dependent category.

60. For the dependent species the clearfelling of the native forest which is their habitat spells certain extinction. This category, which includes such species as the greater glider and the mountain possum, is the one about which the Committee is most concerned. Current research into the provisions which must be made for their survival is extremely limited, and little work has been done on the habitats of the creatures themselves. The same applies to the classes of micro-fauna and the invertebrates which inhabit the native forest. These classes of fauna are essential to the maintenance of the ecosystem.

1. Report of the Committee of Inquiry into the National Estate. 1974.
2. Wildlife Conservation. Report from the House of Representatives Select Committee on Wildlife Conservation, 1972.

61. There is a basic absence of research in the first place to determine the incidence of the many species of fauna which inhabit a particular area of forest scheduled for clearfelling. This primary task should be undertaken well before planting is commenced. The object should be that with the additional knowledge of the habits and needs of these species, there will be sufficient data available to allow a forest plan to be drawn up which will be compatible with the existence of all these animals, particularly those poorly represented in the region. Transcending this requirement is the equally fundamental need for a national inventory to be drawn up so that the regional and national preservation of species can be co-ordinated and assessed. This will be a mammoth task but it is essential to have the basic data.

62. Forestry interests deny the accusations of conservationists that softwood plantations are 'ecological deserts'. Foresters have been keen to demonstrate the adaptability of some species of fauna to plantation life, and cite studies and examples in support of their claims. Where native forest has been cleared to make way for pine trees, dramatic and fundamental changes occur in the nature and population of the wildlife inhabiting that particular area. The wholly dependent species cannot survive and to argue that birds can be seen nesting or that kangaroos or wallabies have been seen grazing (albeit along fire trails) is quite misleading and serve only to gloss over the nature of the change which has taken place.

63. The Committee believes that foresters are concerned about the total environment in which they are working. The effort made by them at the FORWOOD Conference to initiate many of the measures which this Committee also advocates is evidence of that interest.

64. Some States, notably Victoria, are taking greater care now to ensure that their softwood plantations do not seriously interrupt the life of fauna in surrounding areas. The guidelines established are goals which other States might strive to emulate and even attempt to improve. Examples of these measures, such as leaving strips of native forest along streams and watercourses, along ridges, and between plantation blocks to provide native forest corridors, are genuine attempts to overcome the environmental problems associated with large plantations. The Committee regrets that other States practising the clearfelling of native forest have not been as thoughtful. Private companies whose activities are not subjected to the same scrutiny and supervision as those of the States are equally negligent.

65. The Committee is confident that the measures implemented so far can be improved. When more research has been done into faunal requirements, modifications to standard forestry practice can be implemented. Witnesses stated that areas to be left for the preservation of some species may entail the retention of several thousand acres, but this will vary from species to species according to the type of forest and the living habits of the creatures concerned. The Committee considers that to clear native forest without first obtaining this knowledge is foolhardy.

Flora

66. The proper protection and preservation of flora within native forests poses similar problems to that of fauna, namely those of identification, inadequate knowledge, and the implementation of protective measures. Flora has an advantage in that the first stage of identification has already commenced. Under the auspices of the Australian Academy of Science, Professor Specht *et. al.,* have already conducted a survey

of the indigenous plant communities in Australia.[1] With the continuation of that sort of work over the whole of the continent, it is hoped there will be sufficient data on which a network of flora resources can be based to ensure that as many indigenous species as possible are preserved.

67. *Professor Specht's report, which was the culmination of seven years' work,* examined the extent to which scientifically adequate samples of all the main types of ecosystems and their variants were protected in national parks and reserves in Australia. According to the survey only 32 per cent of the major vegetation alliances of New South Wales, for example, have reasonable representation in existing reserves; 35 per cent have no representation at all. Eight plant species are listed as probably extinct and 30 species are threatened with extinction.

68. The Committee strongly commends Professor Specht's work and report. The following statement from it is cited in support of the need for greater care for our native forests.[2]

> Man's control over ecosystems and thus over evolution is increasingly taking the place of natural selection. Domesticated plants and animals have virtually lost their capacity for existence—let alone continuing evolution—without human assistance; and environments have been so drastically modified that large numbers of species, plant and animal, have been exterminated through loss of habitats . . . As Frankel (1970) concludes—'We have acquired evolutionary responsibility'.
>
> In order to exercise this responsibility wisely we must learn how ecosystems work—not just how a monoculture of domesticated plants such as wheat, sugar-cane, or radiata pine grows, but how all complex and usually perennial ecosystems function. Over long periods of evolutionary time, a subtle balance has been achieved between the environment and the producers, consumers, and decomposers in these natural ecosystems . . . The understanding of the productivity and maintenance . . . of ecosystems will enable them to be manipulated scientifically for the welfare of mankind.

It is that delicate balance which needs to be closely studied and it is fundamental that an adequate model on which to work is preserved. Without tha model the gains and knowledge from the research may prove to be useless. It is essential that as much of that model as possible be retained so that surveys like Professor Specht's may be continued.

69. Stemming from this it is quite clear that to rush recklessly into the clearing of large portions of native forest without first checking what is being destroyed or what the ecological consequences are is irresponsible. The Committee at its public hearings asked many times about the research being done in native forests before clearing. The answers lead to the conclusion that very little is done at all.

70. This criticism is particularly true in areas such as New South Wales where very large coupes of one particular type of native forest (wet sclerophyll) are being clear-felled and converted to softwood planting. The particular significance of this practice on the environment cannot be dismissed by saying that it consists of less than 3 per cent of the total forest area, because in fact the areas of high rainfall, high altitude and good soil being cleared are generally of one forest type. This land is more productive and conducive to high growth rates but at the same time it is also rich in indigenous plant communities where the care already mentioned should be taken.

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1. *Australian Journal of Botany,* Supplementary Series No. 7, July 1974.
2. *ibid.,* page 2.

71. As well as being important for scientific reference reasons, the forest has potential as the supplier of biological resources. In the past use has been made of the organic compounds found in native forest plants, especially in the field of medicine.

72. Although such use of the forest has declined with the development of alternative sources of supply, it still remains a valuable and important potential source for the production of a range of substances.

Soil and water

73. The effect of pine planting upon the nation's water and soil resources is probably little different from that of any other activity where the soil is disturbed, where a crop is harvested and where chemicals or fertilisers are used. There is no doubt that during planting and harvesting a great deal of turbidity in streams is caused by the run-off from areas being worked, and it is equally clear that some of the chemicals used to suppress weeds and the phosphates used to promote growth find their way into streams. An additional factor associated with the cultivation of softwoods is that they are being planted in the more elevated regions where streams until now have been relatively undisturbed.

74. Evidence given by several witnesses was consistent in attributing declines in aquatic life in streams to concentrations of foreign substances in the water, as well as to increased turbidity. The Committee is concerned that the existence of aquatic life should be at risk through the clearfelling of native forests and the establishment of softwood plantations.

75. As Australia relies heavily upon a quite meagre water resource, water quality is at a premium. Every precaution should therefore be taken to ensure that its quality and its quantity are not jeopardised, particularly in the headwaters of streams.

76. Besides the increased turbidity created by the initial clearing and subsequent harvesting, a very important factor is the run-off from the intricate network of roads constructed for the maintenance of the forest. Such roads provide an essential service and some social amenity, but the number of them is excessive and many are poorly constructed. Both these factors add unnecessarily to the siltation level in watercourses.

77. Evidence was given to the Committee on the adverse effects of forestry management practices upon the soil and streams. Despite the best of intentions and clear directions by forestry services, there are many examples where forest practices contribute to soil erosion and stream siltation. The Committee was shown several instances where cleared forest was windrowed in such a way that natural contours were not followed. Instead windrows were seen to run up and down the slopes, thus allowing the water to run unimpeded into the streams below.

78. There is a great need for more supervision of the way in which clearing is done. Indeed in some States it is obvious that the fundamental steps still need to be taken to detail specific guidelines for the management of forests and to ensure that the environmental hazards are minimised. The lack of such directions and supervision and the absence of uniformity was recognised by FORWOOD, for amongst the Conference recommendations there are several urging the same action.

79. Softwood plantations are also know to affect the structure of the soil. This varies from site to site, but it is apparent that more research is needed to determine the extent of that change so that only sites capable of producing softwoods without long-term side effects are planted.

80. Many witnesses referred to the loss of nutrients in the soil caused by softwoods, plus other effects such as podsolisation, loss of bulk density, and the greater demands of softwoods upon the water supply of the subsoil. It is also known that there are problems in some soils that are more erodible than others and that there are difficulties in maintaining growth rates after the first rotation.

81. It does not necessarily follow that softwood plantations should be criticised for the above reasons. A carefully considered assessment needs to be made to ensure that only soils which have suitable qualities are planted. Each area should be closely studied for its soil quality as well as for its flora and fauna value, and decisions on its use ought to be carefully weighed. Particular attention needs to be given where softwood conversion is carried out in water catchment areas. Guidelines set down by the Victorian Soil Conservation Authority are cited as good examples of the criteria that should be followed in all States.[1]

Fire

82. The use of fire as a forestry management tool is another area where more research is needed particularly into the environmental consequences. The Committee observed that fire is used for two major purposes in native forests, firstly to clean up debris and fallen timber hindering the plantation of both softwoods and hardwoods, and then as a precautionary measure to prevent the outbreak of wildfires which threaten adjoining softwood plantations. Both uses are legitimate, especially in the former instance as the fire releases valuable potash which is of benefit to young trees of all species. With the latter, however, the Committee has some difficulty in believing that the regular use of fire has no effect upon the flora and fauna of the native forest.

83. It was argued before the Committee that fire is a natural phenomenon in the Australian forest and the heat it generates is essential in the reproductive cycle. The extent to which naturally occurring fires differ in effect from controlled burning is not clear. Controled burning is used to rid the native forest of the litter which builds up on the forest floor and which could fuel a wildfire. This burning can get out of control and can burn the forest crown thus doing extensive harm. The Committee understands this risk however infrequently it may occur. Where native forest is in effect a firebreak for softwood plantations more care ought to be taken and the environmental effects of the practice ought to be studied more closely.

Research

84. The Committee has stressed the need for extended research in a number of areas, and in doing this it is fully aware of some similar recommendations made by the FORWOOD Conference. This research is urgent and the Committee emphasises that the future of any softwood planting program hinges upon it being completed.

85. The Committee has recommended that research be conducted into many areas of forestry, especially where native forest has been clearfelled. A great deal more needs to be known of wildlife populations, habitats and distributions. Work needs to be done surveying flora and identifying areas in need of protection. It is also paramount that environmental aspects of forestry management techniques be given far more attention.

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1. See transcript of evidence, page 287.

86. Work is being done by the State forest services, by private companies, and by the Forest Research Institute. The CSIRO and universities are also engaged on various tasks. Obviously some co-ordination is needed as well as some means by which information is disseminated.

87. The integration of the Forest Research Institute with the CSIRO is a valuable first step and the Committee suggests that the Institute should assume the co-ordinating role. With the provision of necessary funds, specific projects could be allotted to people under its own direction and also to universities where post-graduate students and others could be gainfully employed. These projects should include the environmental issues raised by the Committee.

88. In order to minimise the hazardous effects of softwood forestry upon the environment, the Committee makes the following recommendations:

(i) Money should not be loaned to the States for the planting of softwoods in areas where native forest is to be clearfelled, except where a thorough and stringently supervised independent research program has been conducted into the flora and fauna of that area, as well as its soil quality, and where the planting plan allows for their protection.

(ii) Additional funds should be made available to the CSIRO and other relevant bodies for research into the many areas of forestry management about which so little is known.

(iii) Immediate steps should be taken to increase the funding for the comprehensive biological survey for the entire Australian continent.

7. RESOURCE MANAGEMENT

89. The Committee believes in the continuation of the softwood planting program on a reduced scale of planting and with additional environmental safeguards. It is reasonable to assume that if these environmental restrictions are implemented then the reduced rate of planting will ensue.

90. Softwood planting involves the important and fundamental question of resource management because it makes use of public assets which are in great demand, including the land on which they are to grow and the natural forest which they often replace. More consideration needs to be given to the conservation of these resources, for, as hindsight shows, had it not been for the exploitation they suffered in the past, the need for this examination may not have arisen.

91. Careful consideration also needs to be given to financial and natural resources. It is incumbent upon Government to ensure that the public money involved in the development of the latter is not only profitably employed, but also that it is not spent deleteriously. It may not be relevant to assess the economic viability of the softwood program according to strict rules of accountancy, because of the now wide acceptance of other values which have to be considered, especially where the allocation of public resources is involved.

92. To examine softwood forestry on the narrow economic criteria of whether it provides a sufficient return upon the capital invested is a starting point. If the interest of private enterprise in forestry is any indication, it would seem that the returns are fairly attractive. Although the private interests which gave evidence were unanimous in

stressing the advantages of growing their own softwoods, they also submitted that the industry needed greater government assistance.

93. However, the industry already receives considerable assistance, especially from State forest services upon whom they rely for supplies of timber grown by the State, for leases of Crown land for hardwood logging purposes, and for leases of Crown land for their own softwood plantings.

94. Industry representatives denied that their profitability is dependent upon State forestry services providing them with raw materials at rates which provide the States with only marginal economic returns. The companies claimed that it is inappropriate to expect both primary and secondary phases of the industry to be profitable and insist that the industry is vertically integrated so that margins are only relevant once the product has been sold.

95. The Committee was not able to establish whether States supplying raw materials to private enterprise receive sufficient in royalties and other returns to cover the costs of production and other outgoings both tangible and intangible. The basic question remains whether public resources are being allocated in the public interest.

96. Therefore an analysis is needed of the broadest possible cost/benefit type and also of the strictly financial type which will show whether returns to the States from softwood forestry compare favourably with other forms of investment. With the former, weight will have to be given to many intangibles such as the value of retaining native forest as wilderness areas, of retaining native forest as recreation areas, or of retaining them for their flora and fauna values. Credit should also be given to the benefits of decentralisation and employment in rural areas, both of which are maintained by the timber industry. Other criteria to be recognised and estimated should include the cost to State and local government of providing transport and essential services for that development.

97. An equally thorough assessment should also be made on the strictly financial side. This will not be simple because forestry is a long-term investment, the profitability of which is unpredictable. However, because of the amount of public funds involved it must be demonstrated that the proposed investment is prudent and in the public interest.

98. One of the most important elements in any discussion of the economics of Australia growing its own softwoods is the comparative advantage such a scheme has over imports. The policy of self-sufficiency, or the attainment of a net balance of trade in timber, was adopted at a time when Australia's overall balance of trade was adverse. Recent trends show that the validity of this policy should be reassessed.

99. The Committee is convinced of the ability of New Zealand to supply the Australian market, through provisions of the NAFTA agreement. It also seems likely from information given to the Committee by New Zealand sources that they can supply timber or timber products, at least to our east coast, more cheaply than Australian suppliers. If this can be verified, it is clear that with a large trade balance in Australia's favour, much more consideration might be given to New Zealand as a long-term and stable source of supply. This most important question should be given close consideration in any economic analysis of the value of further promoting the local industry.

100. A common submission of witnesses who argued that softwood forestry is an unwise and unprofitable public investment was that due allowance was not made for the cost of land where Crown land was being planted. They pointed out that there was

little or no consideration of the opportunity cost of that land, and that elements such as the cost of maintaining the departmental infrastructure, the low interest rates on finance loaned under the Federal softwood legislation, exemptions from charges for rates, and other privileges enjoyed by the Crown, tended to be ignored.

101. The validity of this view is not certain, but clearly accounting methods vary from State to State and inevitably include different indicies. In Victoria and South Australia for example, where more marginal land is used, the cost of land is included. The Committee was informed that the rate of return on capital in those States was said to be 6-8 per cent and 10 per cent respectively. Little is known of the other States. In New Zealand the Committee learnt that a minimum of 10 per cent is to be realisable before a Government planting project can proceed and that usually the returns are considerably higher.

102. The Committee recognises the contribution that the private forestry sector makes to the softwood planting program, but whether it should receive direct government assistance is a question which should be decided by the Industries Assistance Commission. The only comment the Committee has to make is that, as private enterprise is less responsive to public feeling, firm controls would need to be exercised to ensure that the same environmental standards expected of the States are observed.

103. An examination of the economics of softwood forestry is complex and the question of whether forestry should continue to be assisted if its rate of return is very marginal depends on an intensive analysis which should consider all the factors mentioned. It would also depend upon the political decisions of whether Government should finance marginal or unprofitable enterprises, and whether the national need is sufficient to make such a consideration relevant.

104. The Committee makes the following recommendations:

(i) An immediate study should be carried out by a body such as the Bureau of Agricultural Economics to determine the economic viability of the softwood planting program, on both strict financial grounds and on the broadest possible cost/benefit grounds.

(ii) Requests for assistance by private interests should be referred to the Industries Assistance Commission.

105. The Committee believes that the future of the softwood planting program should depend upon the findings of these investigations. If it is found that economically the program is marginal or worse, then obviously no further planting should be financed. It it proves to be a wise investment then there is no reason for it not proceeding providing the environmental safeguards are met.

8. LAND USAGE

106. The Committee has already stressed that greater care needs to be exercised in the uses to which our natural forest resources are put. Australia is not well endowed with land having qualities of good soil, high rainfall or a climate conducive to intensive cultivation. Thus the Committee finds that where all these elements are present, the pressure being placed upon that land is becoming acute. One of these pressures is that exerted by forestry in its quest for additional low cost land. It is now widely recognised that there are other uses to which land may be put including those being promoted by the public itself. Foremost among these is recreation.

107. The forestry services which have recognised this need have attempted to reconcile their wood production charter with public demand and have adopted what is termed a practice of 'multiple use'. Although some people regard the doctrine as a diversionary tactic behind which the exploitation of the forests continues unabated, the Committee believes there is a developing response to the public need.

108. There are those within our society, however, who have a greater need than simply the provision of facilities within the forests and the roads giving access to them. This group stressed the need to retain a significant proportion of the forest as wilderness. They emphasised that with the stresses of urbanisation in today's society there is a great need for man to regularly escape his civilisation. The provision of national parks is partly aimed at satisfying this need, but the pressures being placed on national park areas, if they are not augmented, will soon prove as destructive as the development which might have occurred had they not been dedicated in the first place.

109. It is essential in wilderness areas that there be no improvements, that they be roadless, and that they remain in their primitive state. Such requirements are incompatible with any development. It was said in evidence to the Committee that those who have been responsible in the past for the use of forested areas have had little regard for the need to retain wilderness areas for recreation purposes. It is the fear of others that unless action is soon taken to protect it from exploitation by timber interests, both local and overseas, there will soon be little Australian forest remaining in its natural condition available for such use.

110. The Committee regrets that land use planning in Australia, with the aim of protecting the values referred to in this Report, is only in an embryonic stage. In only one State, Victoria, did there appear to be a system of land use investigation which makes adequate provision for interests other than forestry. The Land Conservation Council of Victoria is also the only body which makes any allowance for effective public participation. That is not to say that the degree of public participation or interest is ideal, but at least the avenue is there. Nor is it to say that other States are completely idle in this regard, for although each has machinery to determine the way in which land may be allocated, participation by the public and the recognition of their needs is not always apparent. This is a shortcoming which has been commented upon by previous inquiries, a notable one being the Report of the House of Representatives Select Committee on Wildlife Conservation. The findings and recommendations of that inquiry are endorsed and commended by this Committee.

Marginal land

111. The action being taken in the States to purchase land which has already been cleared for other purposes (mainly agricultural), and which is suited to forestry, varies considerably. South Australia and Victoria actively seek marginal agricultural land where it is suitable and appropriately located, whereas Western Australia is forbidden from doing so.

112. The disadvantage of purchasing land which might render a project uneconomical or where the land is poorly placed in relation to other forests and processing plants is recognised. There is also the resentment which is created in communities when the purchase of land by the Crown deprives local government of rates revenue. Furthermore, the introduction of forestry into traditional agricultural areas is regarded with some suspicion and there are fears that there will be a loss of services.

The Committee believes that such fears are ill-founded and that forestry can be extremely beneficial in country areas.

113. The main problems in obtaining marginal land are the costs of that land and available finance. The State forest services at present do not have sufficient funds or, in some cases, the authority to actively seek land. The result is that plantings tend to be concentrated on Crown land where the only costs are in site preparation. The Committee believes that greater attention should be given to buying and using suitable land which is already cleared, and a portion of the funds allocated under the Softwood Agreements legislation should be for this purpose. This object should be attainable within the present level of expenditure if the reduced level of plantings the Committee recommends is adopted.

Farm woodlots

114. The encouragement of private forestry on a small scale by farmers varies from State to State and has met with rather an indifferent response. In Victoria for example, loans, interest free for twelve years, are made to farmers who wish to plant softwoods as a long-term project. The Forests Commission gives advice on planting, as well as on maintenance and marketing. Up to 1973 this policy has produced 2000 hectares of such plantings and, while they may be scattered over a wide area, their long-term value may be very significant. Obviously the proximity of woodlots to industry is essential for otherwise transport costs would make such a program economically undesirable.

115. The greatest drawback for the farm woodlot is that of taxation. While the farmer has invested his capital for a long period the yield from that investment comes often in a large lump sum which at present can only be averaged over a period of five years. If farm woodlots are to be more successful some concession needs to be made for the averaging of that income over a longer period.

116. The Committee makes the following recommendations:

(i) All States should seriously consider the implementation of a land usage surveillance plan similar to the Land Conservation Council of Victoria.

(ii) An increasing proportion of the finance loaned to the States should be dedicated to the purchase of land already cleared for other marginal pursuits.

(iii) Financial assistance should continue to be made available to owners of agricultural holdings for the planting of small woodlots on their properties.

(iv) Plans for the plantation of exotic softwoods should be made available for public scrutiny. Full consultation and discussions should be held with interested parties before they are implemented.

(v) Greater encouragement should be given by the Australian Government for the dedication of more extensive areas of Australian native forests as National Parks.

9. THE STATES

117. The Committee cannot ignore the unique problems or the capacities of the individual States. States such as South Australia, whose meagre natural forests were exhausted long ago and which is more isolated from other sources, need to grow as much softwood as possible to meet their own requirements. Some other States are

more fortunate, having greater reserves of native hardwood and being in a better position to import softwoods at competitive prices. As well each State has widely differing soil types and climatic conditions, each of which influences the productivity of long-term planting programs. Different considerations apply to each State, preference being needed where the demand is greatest and where there can be compliance with the prescribed environmental safeguards.

Victoria

118. Victoria was once rich in timber resources but, owing to exploitation in the past and the incidence of severe bushfires, work is needed to restore the forests to their former productive capacity. The State is tackling this task enthusiastically both by replanting derelict hardwood areas and by planting softwoods.

119. Victoria has substantial areas of natural forests and land available in suitable rainfall areas. Its markets are well located and the industry is becoming sufficiently diversified to make the maximum use of timber harvested. The Forestry Commission has, as part of its charter, responsibility for managing forests in the public interest and to this end probably leads the field in adopting the multiple-use concept. State forests are regarded as part of the public domain and encouragement is given to their usage.

120. The Committee was pleased to see the example which the Victorian Forestry Commission sets for other States and the environmental standards it applies to its own plantings. It was satisfying to note the encouragement given by that State to farm woodlots although in practical terms there has not been a large response by landowners to the scheme. It is also noteworthy that 27 per cent of the area of softwoods planted is occurring on marginal farmland especially purchased for that purpose.

121. The establishment of the Land Conservation Council of Victoria has been a progressive move in the planning and usage of public land. Although the Forestry Commission feels a little restricted by the disciplines it exerts in that long-term planning is made more difficult, there is some guarantee that land is properly allocated and that the public can participate in the Council's deliberations.

122. Victoria has the potential to become a major source of timber within Australia. The Committee believes that, if more marginal land can be purchased and regeneration of hardwood areas continued, Victoria should continue to be assisted by the softwood planting program.

South Australia

123. South Australia was never well endowed with native forest and most of what was there at first settlement has long since been cleared. The State's softwood planting program which commenced in 1870 has always been one of necessity.

124. Because of the scarcity of native forest it is imperative that the remaining resources be preserved, not only for the flora and fauna it contains but for its own value as a sample of its natural state. The area of native forest remaining is 786 000 hectares, of which only 25 000 is managed by the Woods and Forests Department. A further 29 000 hectares is included in National Parks, and the remainder is either unoccupied Crown land, is leased, or is freehold. It is this land which is in greatest need of protection.

125. Unlike other forestry services in Australia, the South Australian Woods and Forests Department is engaged in the milling and processing of its plantation sawlogs and sells its produce in open competition with two large private forestry groups.

126. As a result of its vital interest in softwood forestry, the Department is keen to plant as much as the limited amount of suitable land will allow. The purchase of land already cleared is actively pursued and as it is scarce the Committee accepts that a strong case exists for South Australia to be given special consideration. As the areas sought for planting have already been cleared and are generally flat, little environmental harm can be done, that is apart from impoverishment of the soil.

Tasmania

127. The State is well endowed with native hardwood and is the base of several paper manufacturers who require regular supplies of long-fibre softwoods to blend with the hardwood. This industry is vital to the economy of Tasmania, but the bulk of its softwood fibre is being imported. Two of these companies intend, in the future, to replace these imports with softwoods from their own plantings. Their reason is to guarantee their source of supply and overcome difficulties experienced in the past with the uncertainty of imports.

128. Tasmania's hardwood forests are currently being regenerated and replanted. Until those forests return to full productivity, softwoods will also be needed to keep the sawmilling industry full occupied.

129. Tasmania's hardwood timber resources have an important role in meeting future Australian needs. Tasmania already supplies 15 per cent of the nation's sawn wood, and 75 per cent of its pulpwood. There is no reason for the State not being able to make an even larger contribution. It is necessary that strict management procedures be enforced and not relaxed in response to economic pressures.

130. Tasmania's softwoods program is another question. As it has a suitable climate and extensive reserves of hardwood, it seems a little incongruous to convert good hardwood-producing land to softwood production. It is true that the amount of softwood planting is small (1200 hectares per year) but, as the Committee has stressed, this might more properly occur on marginal farmland.

131. The Committee believes that financial assistance to Tasmania should include conditions that more emphasis be given to the purchase of marginal land and to the regeneration of hardwood forests.

Queensland

132. Queensland grows softwoods of a different species to those from elsewhere in Australia because of its different climatic conditions. Instead of *Pinus radiata* and *Pinus pinaster* planted in other States, Queensland is restricted to growing hoop pine (*Araucaria cunninghamii*) and slash pine (*Pinus elliottii*), slightly less productive species, but more suitable for Queensland conditions. Hoop pine is a native softwood but, like other native species such as blackbutt and cypress pine, stands of it have been depleted to a stage where replanting is needed to restore their productive potential.

133. Queensland's softwood plantations are mostly concentrated on the coastal lowlands, and it is expected that of a total planned area of 100 000 hectares, 90 000 hectares will be planted in those soils. There are environmental hazards in concentrating large areas of exotic forest in one specific ecosystem. There is growing community opposition to the Forestry Department's plans. This opposition stems from the demands for a larger area for the National Park planned for the Noosa River catchment and applies with equal strength to clearing rainforest for softwood planting programs.

134. Queensland forestry authorities are aiming to attain the national planting goals set down by the Australian Forestry Council. In this aim it seems unfortunate to the Committee that there is a lack of flexibility in the proposed plans. 100 000 acres is destined to be planted in the Noosa River area to support a pulp mill, yet to be established. The Committee does not question the need for the pulp mill, but it is concerned that so much native forest is to be sacrificed to make it viable. While the commitment to such a solid block of planting may have its base in economic considerations, other costs may be more important.

135. Because Queensland has advantages of rainfall and soil the Committee considers much greater use should be made of already cleared land for softwood planting. As such land exists, the problems are finance and those connected with finding sufficient vendors in a consolidated area.

Western Australia

136. The isolation of Western Australia justifies a softwood planting program. The south-western corner of the State is generally well-timbered country, the forest being mainly the native hardwoods of jarrah and karri. These species have borne the demands of Western Australia since the days of first settlement. As these species have long growth cycles some supplementary source of timber is necessary.

137. The greatest problem facing Western Australian forestry is the infestation with the fungal disease *Phytophthora cinnamomi* which is killing substantial areas of good jarrah forest. Work is progressing on the control of the disease but no remedy has been found. The Forests Department of Western Australia has identified the areas affected and is conducting tests to determine which species are resistant.

138. If this disease becomes more widespread, Western Australia's natural timber stands will be at a premium and will have even greater pressures placed on them.

139. Some marginal land has been purchased in Western Australia for softwood planting. Until it has been established whether *Phytophthora*-affected areas can be safely planted with softwoods, it remains the best opportunity to extend the State's softwood plantations. This land would, of course, be in addition to water catchment areas where the Forests Department has responsibility for safeguarding water quality. In Western Australia where water salinity is a very real problem, the planting of softwoods therefore has a dual purpose.

New South Wales

140. The State has been engaged in softwood planting since 1915 and has concentrated its plantations in five main areas, the largest of which is centred on Tumut. The Forestry Commission emphasised that the percentage of land acquired was relatively high in all these areas, in some cases as high as 80 per cent. The bulk of it was agricultural land with varying degrees of improvement.

141. Conservation witnesses from New South Wales and the Australian Capital Territory were highly critical of the Forestry Commission of New South Wales during the inquiry. Most of the criticism was directed at the large areas of clearfelling of native forest being carried out along the high rainfall, high altitude areas of the Great Dividing Range. The Committee conducted an aerial inspection over these areas and was able to see the activities of the Commission for itself.

142. The Committee has stressed the importance of utilising marginal agricultural land rather than areas of native forest in the softwood planting program. Mention has

already been made of the compliance with the former but the Committee believes that its criticisms of the clearfelling of native forest are particularly relevant to New South Wales. While the Forestry Commission of New South Wales accepts some responsibility for water catchment protection, it was evident from its submission and from evidence given that flora and fauna values are given little consideration.

143. During the flight over the State's mountainous area the Committee saw little evidence of forestry management techniques employed to protect the environment. While it is true that slopes over 18 degrees may not have been cleared, clearfelling and windrowing had been carried out with only two aims, the ease of planting and the ease of harvesting. Windrows were seen to lie in straight lines regardless of contours and dry watercourses and gullies were filled with debris. Only the more permanent streams were protected by any border of natural forest. Plantations were large and no concessions had been made to wildlife by providing natural corridors between adjacent natural areas along which it could move.

144. The Forestry Commission emphasised its concern for thorough long-term planning, but the Committee regrets that so little of this effort is being devoted to environmental matters. Surveys of flora and fauna are not carried out before clearfelling takes place and as far as the Committee has been able to determine the only research undertaken is that done at the University of New England where some projects are given financial assistance. Apart from foresters the Commission employs no one with specialised qualifications in the environmental sciences.

145. Another shortcoming in New South Wales is the lack of public consultation in the planning process. The Forestry Commission publicises its plans but beyond that there is no avenue by which interested parties in the community can exercise an effective role. The State Pollution Control Commission carries out investigations where controversy arises or where a matter is referred to it by the Forestry Commission. As the Committee has stated elsewhere in this Report, there are better ways of involving the public and of making land use decisions.

146. The Committee believes that New South Wales should continue to be given assistance under any future Softwood Forestry Agreements legislation where the recommendations of this Committee are observed.

10. FUTURE SOFTWOOD FORESTRY LEGISLATION

147. From the foregoing it will be evident that any future softwood forestry legislation should be substantially different from previous Acts. However, two major and basic questions will be needed to be determined before any legislation can be contemplated. These are the questions of economic viability and the areas to be planted each year. As the Committee recommends, both analyses ought to be done as quickly as possible with proper consideration of all the pertinent elements raised in this Report.

148. Assuming that the answers arrived at in these analyses lead to the continuation of the Softwood Forestry Agreements legislation there remains the question of the actual form the agreements should take.

149. The State forest services which implement the planting program are united in pleading that the duration of any future legislation be extended to ten years, i.e., double the present period. The Committee believes this suggestion has merit, provided of course that it does not give blanket approval for a predetermined and unalterable rate of planting.

150. The Committee was told that the States have difficulty in forward planning principally because of the time involved in the preparatory stages of planting. Land is not easy to obtain, especially the marginal agricultural land. Time is needed to plan the use of the land, to clear it if necessary, to cultivate it, and then to actually plant it. As the Committee has suggested that additional procedures be adopted it is considered that the extension sought is reasonable and will be conducive to good forest development and management.

151. Evidence was put to the Committee by State forest services that the interest-free period of the loans be extented from ten to fifteen years. The reason for this request was that the first yield from the forest comes from thinnings which are not normally cut until about fifteen years after planting. The Committee understands this difficulty but it does not agree that a further extension of the interest-free period can be supported.

152. The main purpose of the legislation as the Committee sees it is to lend finance to the States on terms which suit the nature of the investment. In the Committee's view, the existance of an interest-free period of ten years does not conform with this object. The Committee would prefer to see interest accrue from the commencement of the loan, with actual payment to a date fiteen years later.

153. The Committee recommends:

> The next Softwood Forestry Agreements Legislation should cover a period of ten years, with interest accruing from the commencement of the loan, and with deferment of repayments of instalments of principal and interest for fifteen years.

154. It is essential that a progressive check be kept on the total planting commitent. The Committee reiterates that it is basic to any future legislation that an independent and thorough assessment be made every three years to ensure that the area being planted does not exceed the needs of the nation.

155. Thus while the States may be assured of long-term finance for their softwood planting programs, there will be a periodic review to control not only the actual amount allotted but also the total area planted.

156. The Committee strongly advocates the increasing use of marginal agricultural land for future plantations and considers that it should be a fundamental feature of the States' approach to planning future programs. The major difficulty the States face in implementing this policy, apart from locating available land in viable units, is finance. If the planting program is reduced it may simply require the diversion of funds from planting to land acquisition.

157. As well as financial considerations there are those environmental safeguards which the Committee proposes ought to be incorporated in future Softwood Forestry Agreements Acts. In the 1967 Act, the only reference to such factors was the brief statement that:

> The State shall ensure that planting during each year is carried out efficiently and in conformity with sound forestry and financial practices.

The 1972 Act went a little further:

> The State shall ensure that planting during each year is carried out efficiently and in conformity with sound forestry and financial practices and shall ensure that environmental factors relating to planting have been considered.

158. These provisions are unsatisfactory and those 'sound forestry . . . practices' ought to be defined. Most States will not have difficulty in complying with the

more stringent requirements. The FORWOOD Conference itself advocates many of these practices.

159. The Committee wishes to see the enforcement of the following principles as a prerequisite to the allocation of further finance advanced by the Australian Government for softwood plantings.

(i) surveys should be conducted on each area scheduled for planting to determine the flora and fauna and their relative preservation values.

(ii) Plantation estalishment should be planned with due provision for the preservation of those species of flora and fauna identified as being endangered in that region.

(iii) Forestry management procedures should be strictly regulated in accordance with the following directions:

(a) That regardless of site or soil quality slopes in excess of 20 degrees must not be planted except where that land has already been cleared and needs consolidation due to soil instability.

(b) Where native forest is clearfelled, timber of commercial value should be removed and the remaining material windrowed parallel to the contours before being burned.

(c) For the preservation of water quality and for the passage of wildlife, uncleared strips at least fifty metres wide should be left on either side of all watercourses, permanent or otherwise.

(d) Ridges should be left uncleared to preserve the natural skyline and to make further provision for the transit of wildlife.

(e) Plantations should be limited in size and arranged in a mosaic pattern to avoid extensive areas of monoculture.

(f) Strictly applied limits should be placed on the area of clearfelled coupes.

(g) No clearfelling, snigging or other activities involving disturbance of soil should take place within fifty metres of any permanent stream.

(h) Roading should be minimised to lessen erosion and water run-off. Roads should be constructed so that the run-off from them causes the least possible harm to the quality of water in nearby streams.

(i) Only soils capable of growing timber on a sustained yield basis should be utilised.

(j) Logging operations should be prohibited in unsuitable weather.

(k) Controlled burning should be kept to a minimum.

(l) Stringent controls should be applied to the use of pesticides and weedicides to minimise adverse side effects.

160. The Committee recommends that these guidelines be included in any new softwood agreement legislation.

11. CONCLUSION

161. In making this Report to the Parliament the Committee is conscious of the problems currently besetting the Australian timber and paper industries, but hopes they do not prevent the objective analyses of the softwood planting program recommended. The Committee believes that the present slump is only temporary and

that in time its recommendations, if implemented, will make a valuable contribution to the rationalisation of the industry and the protection of the environment.

162. The Committee thanks all those State forest services, companies, groups and individuals for the submissions made to the inquiry, and for the valuable evidence given during public hearings throughout Australia. Members are also grateful to those who assisted in making the Committee's inspections possible, both in Australia and New Zealand.

APPENDIX 1
LIST OF WITNESSES

BANNISTER, Mr C. H.	Chairman, Wilderness Protection Committee, Sydney
BEGGS, Mr B. J.	Conservator of Forests, Forests Department of Western Australia
BELL, Dr F. C.	University of N.S.W., Sydney
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BRABIN, Mr T. R	General Manager, Victorian Sawmillers' Association, Melbourne
BRUCE, Mr W.	Member, Carlingford and North Rocks Bushland Trust, Sydney
CAMERON, Mrs M. P.	Tasmanian Conservation Trust, Launceston
CAMERON, Mr P. M.	Secretary, Plywood Association of Australia Ltd, Brisbane
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HALL, Mr M. J.	General Manager, Australian Paper Manufacturers Ltd, Melbourne
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HARROLD, Dr A. G.	President, Cooloola Committee, Noosa Heads, Queensland
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JURSS, Mr E. R.	Secretary/Manager, Maryborough/Hervey Bay District Development Board, Maryborough
KIDD, Alderman J. E.	Mayor of Gympie, Gympie City Council, Gympie
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