

ENVIRONMENTAL ASSESSMENT REPORT

ON THE EXPORT BY

SAWMILLERS EXPORTS PTY LTD

OF WOODCHIPS PRODUCED FROM
SILVICULTURAL OPERATIONS IN STATE
FORESTS IN NORTHERN NSW AND FROM
PRIVATE PROPERTY OPERATIONS

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EXPORT OF WOODCHIPS PRODUCED FROM SILVICULTURAL OPERATIONS IN STATE FORESTS IN NORTHERN NEW SOUTH WALES AND FROM PRIVATE PROPERTY OPERATIONS

SUMMARY

On 2 December 1991, the then Acting Minister for the Arts, Sport, the Environment, Tourism and Territories directed that an environmental impact statement (EIS) be prepared on part of the woodchip export operations of Sawmillers Exports Pty Ltd (SEPL) in northern New South Wales in accordance with the Administrative Procedures of the *Environment Protection (Impact of Proposals) Act 1974*. SEPL, a subsidiary of Boral Limited, purchases woodchips from a variety of companies, some of which are other Boral subsidiaries, and exports the woodchips from facilities at Newcastle. The Environment Protection Agency (EPA), an agency of the Federal Department of Environment, Sport and Territories, has assessed the EIS in this assessment report.

The principal conclusions of the report are that:

- 1) provided undertakings in the EIS and recommendations of the report are implemented, there is no reason why an export licence issued to SEPL should not allow export of woodchips from the designated sources;
- 2) within the limits of available knowledge, pulpwood harvesting for woodchip exports from the two designated sources is considered sustainable;
- 3) protected areas, including World Heritage, National Estate, nominated wilderness, national park and some old growth forest areas, are excluded from woodchipping;
- 4) surface water yield and quality issues are manageable under existing controls;
- 5) endangered species issues are manageable under existing controls, although more effective controls are needed for the protection of habitat trees;
- 6) the impacts of silvicultural management operations should be acceptable provided established State Forests of NSW prescriptions are met. The incentives provided by exports to chip silvicultural residues could result in the loss of forest values, including felling of too many habitat trees;
- 7) although private property forestry and clearing supplies only a small part of SEPL's woodchip exports, potential growth in the use of this source is considerable. More effective control of the production of woodchips from this source is recommended.

The area from which SEPL draws its woodchips lies between Wyong in the south and Grafton in the north and from the coast to west of the Great Dividing Range. It contains an estimated 5.4 million hectares of forest, about 2.2 million hectares or 40%

of which is privately owned forest. Within its boundary are many forest types, national parks, the Australian East Coast Temperate and Sub-tropical Rainforest World Heritage area and properties on the Register of the National Estate.

The woodchips purchased by SEPL are produced from sawmill wastes, residues from logging operations conducted under New South Wales Forestry Commission direction in State forests, silvicultural management operations conducted by the Forestry Commission and forestry and clearing operations on private property. A proportion of the woodchips produced are not purchased by SEPL but are used for the domestic production of wood products.

When the former Minister for Resources, the Hon Allan Griffiths, restricted the designation to the two latter sources of pulpwood from which woodchips are produced, namely silvicultural residues and private property forestry operations, he effectively limited the scope of the assessment to about one third of SEPL's operation. The EIS could not address the production of woodchips from sawmill wastes or logging residues which comprise about two thirds of the woodchips exported. Although legal, restricting the EIS to only part of SEPL's operation drew criticism from conservation organisations and made the assessment difficult and, in some respects, artificial. SEPL has continued to export woodchips from the sources being considered within the EIS throughout the assessment, under licences issued by the Minister for Resources. This has also drawn criticism.

Public review of the draft EIS between 3 November 1993 and 14 January 1994 attracted 75 submissions. The submissions were taken into account by the proponent in preparing the supplement to the draft EIS which was submitted for assessment by the EPA on 27 May 1994. The few industry submissions lodged supported the operation by SEPL. The majority of submissions received from conservation organisations, private individuals and government agencies were critical of both SEPL's operations and the draft EIS. Conservation organisations actively pursued an agenda to have the whole of SEPL's operations examined, if not closed down.

Harvesting of pulpwood from silvicultural management operations and forestry and clearing operations on private property is considered sustainable at present levels. There is some uncertainty, however, whether an increase in production up to the 500,000 tonne per annum limit of the present export licence could be sustained without adverse impacts on the environment. Relevant issues considered within this report relate to the imperfect knowledge of forest values, particularly in private forests, the influence of income from woodchip sales on silvicultural practices and the effects of possible future reduction in sawmill and State forest logging residues.

Forestry operations and woodchip exports are covered by a number of policies and programs of the Commonwealth and New South Wales Governments and administered under various statutes of both governments. The overarching policies are those contained in the National Forest Policy Statement and the National Strategy on Ecologically Sustainable Development. Woodchip exports are licensed by the Commonwealth Minister for Resources. Forestry in State forests is administered by State Forests of New South Wales (the corporate body of the Forestry Commission). Forestry and clearing operations on private land are administered under various

State and local government Acts and regulations which vary in their effectiveness throughout the supply area.

Knowledge of the natural values of the forests of the supply area, including the species of flora and fauna present, is incomplete, particular knowledge of forested land in private ownership. This was reflected in the content of the draft EIS and supplement and a source of criticism in public submissions. The EPA has concluded that it would have been unreasonable to expect SEPL to undertake detailed surveys over the supply area as a condition of its licence because of the scope of the work required relative to the nature and value of SEPL's operations.

The report recommends three approaches. First, where approval is sought to harvest pulpwood for export from individual private properties, flora and fauna surveys and harvesting plans should be completed as a prerequisite for approval. Second, the New South Wales Government program of environmental impact assessments of State forests should be accelerated to cover areas of State forest in the supply area from which pulpwood will be harvested. Third, the most effective overall way of filling information gaps about the natural values of forests would be for the New South Wales and Commonwealth Governments to agree to conduct a comprehensive regional assessment in accordance with the National Forest Policy Statement.

Protected areas, including World Heritage, and National Estate areas, designated wilderness areas and areas for which wilderness nominations have been accepted by the New South Wales Government, national parks and some areas of old growth forest are excluded from woodchipping either by statutory controls or policy. The report recommends that this state should continue and that areas of high conservation old growth forest should be protected in accordance with the National Forest Policy Statement.

Water yield, water quality and soil erosion and the protection of endangered species are considered to be protected adequately by existing Commonwealth and State legislation.

Silvicultural management operations are conducted by the Forestry Commission as part of its program to improve the productivity of State forests. They are conducted under management plans prepared in accordance with New South Wales forestry and other legislation. Although harvesting of residues from silvicultural management and logging operations were defined in the EIS as distinct operations, they overlap in some respects and their effects cannot always be differentiated. Generally, the EPA found that the environmental impacts of producing woodchips from residues from silvicultural operations were acceptable but there are several areas where there is cause for concern and corrective action is necessary.

There is evidence that income from woodchip sales from silvicultural residues has supported silvicultural management operations and that such operations have expanded through revenue from this source. Conversely, if revenue from this source stopped, silvicultural management would probably contract. Public submissions argued that silvicultural management is woodchip driven and is causing unacceptable environmental impacts over wider areas than necessary. There

is evidence that this is true to some extent. Excessive growth of this sector of the industry should be discouraged.

There was also evidence that the habitat values of forests are being degraded by silvicultural operations. For example, old and damaged trees not suitable for sawlogs which commonly contain hollows which provide habitat for many species of animals and birds are often culled to make way for new growth. Adequate hollows are essential to maintain these species in an area as well as their broader populations. Better controls are needed to conserve forest habitat.

Private property forests are an important timber source and a very important reservoir of natural forest values. Although there are potentially many controls over private property forestry and land clearing, there are significant gaps in these controls. Anecdotal evidence provided in submissions on the draft EIS suggested that the controls are not always observed or policed effectively. Little, if any, strategic management of the private property forest estate is undertaken and, under present arrangements, no account can be taken of the cumulative impacts of private forestry. These are matters of considerable concern.

Private property forestry is opportunistic and commonly driven by a variety of economic incentives for private property owners. The manner in which SEPL selects its sources of chips from private property operations is claimed to be systematic, involving prior scientific surveys of flora and fauna. Evidence presented in submissions suggested, however, that this was not always so. The management of private property forestry and clearing of private land appears to be far from systematic and differs among the various local government areas. Although the volume of woodchips produced from private property sources is small at present, private property forestry is clearly driven, both by sawlog demand and woodchip demand. Private property forests are likely to increase in importance as a source of logs for sawmillers and pressure on this resource could increase significantly.

Recommendations on private property operations in the report are directed towards improving forestry practices through requiring better information through pre-harvest scientific surveys and harvesting plans. Export controls cannot, however, address all of the management problems of private property forests. Proper compliance with State and local government requirements and, in some areas, better regional planning procedures are also necessary. These matters are, in many respects, beyond the scope of this assessment and the control of SEPL.

Overall, the report concludes that provided that the recommendations related to the issue of a woodchip export licence to SEPL are implemented and there is proper compliance with all relevant State and local government regulatory requirements, the overall impacts of the production of woodchips from silvicultural residues from State forests and from forestry and clearing operations on private land can be considered acceptable. On environmental grounds, there is no reason why an export licence issued to SEPL should not allow export of woodchips from the designated sources within the current 500,000 tonne per annum limit. Recognising that there are issues relating, in particular, to improving the knowledge of forests in the region, the report makes a number of recommendations that are matters for Commonwealth and New South Wales Government consideration.

RECOMMENDATIONS

Recommendation 1: The Commonwealth Government should pursue with the New South Wales Government the undertaking of a comprehensive regional assessment in northern eastern New South Wales. The comprehensive regional assessment should cover all of the areas of woodchip supply.

Recommendation 2: Licences for the export of woodchips should remain subject to annual renewal until such time as forests within the Sawmillers Exports Pty Ltd supply area are covered by a comprehensive regional assessment and a Commonwealth-State regional forest agreement.

Recommendation 3: Long term agreements on the supply of woodchips between the Commonwealth and Sawmillers Exports Pty Ltd or its successors, should recognise the undertaking made by the Commonwealth and State Governments to phase out woodchip exports from native forests in favour of downstream processing by the year 2000.

Recommendation 4: The Commonwealth Government should request that the New South Wales Government give priority to completing environmental impact assessments under the New South Wales *Timber Industry (Interim Protection) Act 1992* over woodchip supply areas, particularly those likely to undergo extensive silvicultural management operations.

Recommendation 5: Export licences should exclude woodchips produced from pulpwood harvested in areas subject to nominations for wilderness status accepted under New South Wales legislation until such time as the nominations are resolved by the New South Wales Government.

Recommendation 6: Old-growth forests that are likely to have high conservation value should be protected in accordance with the National Forest Policy Statement. Woodchips produced from old-growth forests should not be exported until such time as there is agreement between the Commonwealth and the New South Wales Government on the management of this resource.

Recommendation 7: Export licences should specifically exclude woodchips produced from pulpwood harvested from an area that is on the Register of the National Estate.

Recommendation: 8 Sawmillers Exports Pty Ltd should undertake surveys of Aboriginal heritage on private land before harvesting occurs in accordance with undertakings given in the draft EIS.

Recommendation: 9 Applications to export woodchips from harvesting or clearing private property should include information about forest types contained in the areas to be harvested or cleared. In considering applications, the Department of Primary Industries and Energy should take into account the recommendation of the

International Union for the Conservation of Nature that 10% of the pre-European extent of forest type should be conserved in secure reservation areas across its range. Where a forest type is not adequately reserved, advice should be obtained from the Australian Nature Conservation Agency and the New South Wales National Parks and Wildlife Service and taken into account in any decision by the Department or the Minister for Resources on the application.

Recommendation 10: In accordance with the undertakings made by the proponent, flora surveys should be undertaken in accordance with guidelines and by a scientist acceptable to the Australian Nature Conservation Agency before any harvesting of pulpwood for the production of woodchips for export is conducted. In regard to harvesting pulpwood for export obtained from silvicultural residues, there should be an agreement or understanding between the Australian Nature Conservation Agency and State Forests of New South Wales in regard to such surveys.

Recommendation 11: In accordance with the undertakings made by the proponent, fauna surveys should be undertaken in accordance with guidelines and by a scientist acceptable to the Australian Nature Conservation Agency before any harvesting of pulpwood for the production of woodchips for export is conducted. In regard to harvesting pulpwood for export obtained from silvicultural residues, there should be an agreement or understanding between the Australian Nature Conservation Agency and State Forests of New South Wales in regard to such surveys.

Recommendation 12: State Forests of New South Wales should be asked to take into account the species listed under the Commonwealth *Endangered Species Protection Act 1992* when undertaking environmental impact assessments under the *Timber Industry (Interim Protection) Act 1992*.

Recommendation 13: Where flora and fauna assessments identify the presence of endangered species listed under the *Endangered Species Protection Act 1992*, the Australian Nature Conservation Agency should be consulted about action necessary to comply with the requirements of the Act. Where assessments identify the presence of fauna listed under State endangered species legislation the relevant State agency should be consulted.

Recommendation 14: Trees within a forested area proposed for harvesting that have value as habitat for forest dependant species should be identified in pre-harvesting surveys and protected in accordance with a management plan acceptable to wildlife conservation authorities. In instances where endangered species listed under the Commonwealth *Endangered Species Protection Act 1992* are likely to be found, the relevant authority is the Australian Nature Conservation Agency.

Recommendation 15: Pulpwood harvesting and clearing operations conducted for the production of woodchips for export should be undertaken in accordance with State soil erosion control guidelines including Standard Erosion Mitigation Guidelines for Logging and Guidelines for Mitigation of Erosion and Land Degradation for Permanent Clearing on Protection Land.

Recommendation 16: Pulpwood harvesting plans for individual private properties should identify action being taken to protect streams and water quality.

Recommendation 17: Logging plans involving the harvest of pulpwood for export should require the preservation of adequate vegetation to protect stream water quality and habitat particularly in riparian areas.

Recommendation 18: Studies should be undertaken to determine to what extent silvicultural management practices in New South Wales have changed or are being influenced by the existence of markets for woodchip. The results of these studies should be made public.

Recommendation 19: Logging on private property should be carried out in accordance with a harvesting plan produced by the proponent which takes into account State soil conservation guidelines.

Recommendation 20: Applications to the Department of Primary Industries and Energy for approval to export woodchips produced from private properties should include information on the environmental values and the potential impacts of pulpwood harvesting on those properties. Commonwealth environmental protection agencies should be consulted on the nature and extent of information that should be sought.

Recommendation 21: The Minister for Resources should consider, as an export licence condition, the exclusion from export of woodchips obtained from properties in areas where, because of the lack of adequate controls, it is not possible to determine adequately the full extent of environmental impacts, including regional or cumulative impacts.

Recommendation 22: A code of practice for forestry and clearing operations on private property incorporating acceptable environmental protection practices should be prepared and, to the extent that is practicable, enforced. Compliance with such a code of practice should be a condition of export approval for woodchips produced from private property forestry and clearing operations.

Recommendation 23: Statements by property owners on the future use of private forest land from which woodchips for export are being produced should be provided with each application made to the Minister for Resources or the Minister's Department.

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GLOSSARY OF ABBREVIATIONS

AHC	Australian Heritage Commission
ANCA	Australian Nature Conservation Agency
CaLM	NSW Department of Conservation and Land Management
CEPA	Commonwealth Environment Protection Agency
CRA	Comprehensive Regional Assessment
DEST	Commonwealth Department of the Environment, Sport and Territories
EIS	Environmental Impact Statement
EP(IP) Act	NSW Endangered Fauna (Interim Protection) Act 1991
EPA & A Act	NSW Environmental Planning and Assessment Act (1979)
ESD	Ecologically Sustainable Development
ESP Act	<i>Endangered Species Protection Act 1992</i>
ESZ	Extended Supply Zone
FIS	Fauna Impact Statement
Impact Act	Commonwealth Environment Protection (Impact of Proposals) Act 1974
IUCN	International Union for the Conservation of Nature
LGA	Local Government Area
LSZ	Likely Supply Zone
NFPS	National Forest Policy Statement
NGRS	National Greenhouse Response Strategy
NPW Act	National Parks and Wildlife Act
RAC	Resource Assessment Commission
SEMGL	Standard Erosion Mitigation Guidelines for Logging
SEPL	Sawmillers Exports Pty Ltd
SFNSW	State Forests of NSW
TI(IP) Act	NSW Timber Industry (Interim Protection) 1992

INTRODUCTION

The purpose of this report is to assess the environmental implications of a proposal by Sawmillers Exports Pty Ltd (SEPL) to export of woodchips produced from silvicultural residues obtained from State forests in New South Wales and from forestry and clearing operation on private property, in accordance with the Administrative Procedures of the *Environment Protection (Impact of Proposals) Act 1974*. This assessment report considers:

- the adequacy of the Environmental Impact Statement (EIS) prepared by Sawmillers Exports Pty Ltd;
- the potential environmental impacts of the proposal; and
- measures that should be taken to reduce the proposal's adverse impacts.

The report takes into account the draft EIS, submissions received from governments, industry and the community and the supplement to the draft EIS. The supplement together with the draft EIS comprises the final EIS. A map of the area from which SEPL draws its woodchips is at Attachment 1.

Scope of the assessment

SEPL obtains woodchips which it exports from four sources, the waste timber offcuts from sawmills, residues from logging operations in State forests, residues from silvicultural management operations in State forests and timber from forestry operations and clearing on private property. These woodchip sources are defined in Attachment 2. Currently more than sixty five percent of the woodchips exported by SEPL are produced from sawmill wastes and logging residues.

The assessment has only been able to consider formally two parts of SEPL's woodchip export operations, woodchips produced from:

- silvicultural residues obtained from State forests in New South Wales, and
- forestry and clearing operations on private property.

Throughout the report these are known as the designated sources.

The scope of the assessment was set by the former Minister for Resources, the Hon Alan Griffiths MP. In a letter of 14 November 1990 to the then Minister for Arts, Sport, the Environment and Territories, Mr Griffiths stated that:

"... I believe that the export by SEPL (and BFP) of woodchips produced from sawmill and logging residues will not have a significant impact on the environment. I base this conclusion on the fact that sawmill and logging residues are waste material resulting from sawlogging operations which will be carried out regardless of the existence of a market for the residues. In the absence of a woodchip export market, these residues will almost certainly be

burnt or left to rot. No trees are felled in these operations specifically for the production of woodchips."

Mr Griffiths designated SEPL under the *Environment Protection (Impact of Proposals) Act 1974*. "...so that the environmental impact of the export by SEPL of woodchips produced from silvicultural residues obtained from State forests in New South Wales and from forestry and clearing operations on private property can be assessed". In doing this Mr Griffiths specifically excluded the environmental assessment of woodchips produced from sawmill and logging residues. Legal advice provided to the Department of Primary Industries and Energy by the Attorney General's Department indicated that the decision of the former Minister for Resources to limit the designation only to the export of chips derived from designated sources, was within his powers.

SEPL, a subsidiary of Boral Limited, has stated that it does not take part in logging operations or the production of woodchips from round wood. It purchases woodchips from other companies, some of which are also Boral subsidiaries, and exports them. Its physical handling of woodchips begins when woodchips are delivered to its storage and loading facility at Kooragang Island in Newcastle. There are, nevertheless, direct links between SEPL's activities and the nature of operations in the forest. For example, SEPL set standards for woodchip quality which determine, to some extent, the type of pulpwood harvested and has policies which influence private property forestry and clearing. These matters are discussed in the report.

It is not possible to divorce SEPL's activities from operations in the forest. In undertaking this assessment the Environment Protection Agency (EPA), therefore, has examined in a generic sense operations of other companies and government authorities that lead to the production of woodchips from silvicultural residues and private property forestry and clearing operations. SEPL has co-operated in this.

During the scoping process for the EIS, and in public submissions on the draft EIS, a number of respondents argued that the entire woodchip operation of SEPL should be examined. Concern was expressed because that part of SEPL's woodchip export operations which involve the use of sawmill and logging residues would not be assessed as part of the EIS. Concern were also raised that recommendations stemming from the 1978 Commonwealth environmental impact assessment of SEPL's initial operation which focused only on woodchips produced from sawmill and logging residues, had not been implemented fully.

It is the EPA's view that the assessment should have covered all of SEPL's sources of woodchips. In the 16 years since the earlier assessment of SEPL's woodchip operations was completed, there have been significant changes in forest management in NSW and major increases in the export woodchip quota. There have also been additions to the Register of the National Estate, the proclamation of a World Heritage Area within the woodchip supply area, a national commitment to the Convention on Biological Diversity and Commonwealth endangered species legislation has been enacted. There is evidence that the recommendations of the earlier assessment were not implemented completely. The distinction in practice between logging residues and silvicultural residues is not always clear,

demonstrated by the inability to obtain separate figures for the volumes of woodchips produced from the two sources.

Despite all of these circumstances, the EPA concluded it was unable to examine the full range of woodchip sources used by SEPL because of the legal limitation of the designation.

The logging and silvicultural residues are produced a part of State Forests of NSW forest management and sawlog harvesting practices and programs. The environmental impacts of producing the woodchips that SEPL purchases are often a direct product of those practices and programs. This report, unavoidably therefore, goes beyond the strict scope of the designation and comments and makes recommendations on some matters which are not or not entirely the responsibility of SEPL. Such comments and recommendations are directed at governments and government agencies. These instances are identified in the text.

Legislative framework

The proposal, which is considered environmentally significant, falls within the ambit of the *Environment Protection (Impact of Proposals) Act 1974* as a result of the Commonwealth decision required in relation to the issue of a licence to export unprocessed wood in accordance with the *Commonwealth Export Control Act 1982*.

Some areas within the woodchip supply area are listed on the Register of the National Estate. Section 30 of the *Australian Heritage Commission Act 1975* requires a Commonwealth Minister or agency to consider the impact of a proposal on areas listed on the Register or Interim List of the National Estate and not to take action that would adversely affect a place on the Register unless there are no prudent or feasible alternatives to that action.

The supply area contains part of the Australian East Coast Temperate and Sub-tropical Rainforest World Heritage property. Obligations imposed by the World Heritage Convention and incorporated into the *World Heritage Properties Conservation Act 1983* are considered in this assessment.

The woodchip supply area contains examples of flora and fauna species listed under the *Commonwealth Endangered Species Protection Act 1992*. The impacts of the proposal on endangered species are also considered.

Aspects of the proposal are subject to control under various New South Wales State legislative and local government controls. Commonwealth and State controls are described in section 2.6 of the draft EIS. Omissions and errors in that description are addressed in the relevant sections of the supplement.

Action taken to meet the requirements of the Administrative Procedures

On 14 November 1990 the former Minister for Resources designated SEPL as proponent in accordance with the Administrative Procedures of the *Environment Protection (Impact of Proposals) Act 1974*. On 2 December 1991 the then acting Minister for the Arts, Sport, the Environment, Tourism and Territories, the Hon David Simmons MP, directed the preparation and submission of an EIS on the proposal.

Guidelines for the EIS were issued in April 1992 by the EPA after consultation with various Commonwealth and State Government Agencies and conservation groups including the Wilderness Society and the North East Forest Alliance.

A draft EIS was prepared by the proponent and placed on public review initially for 10 weeks from 3 November 1993 to 14 January 1994. As a result of bush fires in NSW in January 1994, a number of organisations were granted extensions of time to make submissions with the agreement of SEPL. The last submission was received by the EPA on 9 February 1994 and conveyed to the proponent the following day. This effectively resulted in a public review period of 14 weeks. All submissions were referred to the proponent to be considered in a supplement to the draft EIS.

A supplement to the draft EIS which responded to the matters raised in the public submissions was submitted to the EPA on Friday 27 May 1994. The Draft EIS and the supplement together form the Final EIS for the proposal.

Seventy five submissions were received in response to the public display of the draft EIS. There were 43 private submissions, 19 submissions on behalf of voluntary conservation organisations, 6 from NSW State agencies, 3 on behalf of forest industry associations and companies, 2 from Commonwealth agencies, 2 representing Shire Councils within the supply area and one each from the Australian Museum and the Macleay Industry Development Office. Submissions are summarised in Appendix 1 of the supplement.

Approximately 30% of the submissions were pro forma submissions prepared by a voluntary conservation organisation objecting to the proposal. It is not known whether the authors of these submissions had examined the draft EIS.

One submission from Mr Barry Griffiths of the North East Forest Alliance (Hunter Region) was omitted from Appendix 1 of the supplement. Mr Griffiths has written to the EPA alleging that his submission was not considered by SEPL in the preparation of the supplement. SEPL explained that Mr Griffith's submission was number 73 in Appendix 1 and that the omission was due to a printing error. Submission number 72 appears at the bottom of page two of the Appendix. Submission number 74 appears at the top of the following page. SEPL claim the submission was examined. The EPA accepted SEPL's explanation. SEPL also undertook to review the submission again and report to the EPA. This was done. The EPA has therefore, concluded that Mr Griffith's allegation is unfounded.

During the assessment of the proposal, the EPA consulted the Australian Nature Conservation Agency (ANCA), the Australian Heritage Commission (AHC) and other Commonwealth and State authorities. There has also been consultation and co-operation with the NSW Department of Planning, Natural Resources Branch, throughout the assessment process in accordance with formal arrangements for co-operation on environmental assessment of proposals between the Commonwealth and NSW Governments.

Major issues raised in submissions

The major issues or concerns raised in submissions received can be summarised under six broad headings:

- reliance on information from NSW EISs which are still in preparation;
- inadequate detail on operational aspects and the existing environment;
- inaccurate predictions of environmental impacts and environment sustainability;
- inadequate consideration of alternatives, justification and need ;
- inadequate consideration of reserves and conservation values;
- lack of consideration of the relationships with Commonwealth policies and programs.

These issues and concerns are discussed in the report.

A number of submissions addressed issues which were outside the strict scope of the assessment. These were from conservation organisations in particular, which sought to have the assessment cover the whole of SEPL's woodchip operations and, to some extent, NSW forest practices. As discussed above, where consideration of these broader issues was necessary for a proper consideration of the effects of SEPL's purchase of woodchips from the designated sources, the report does extend to address them.

THE PROPOSAL

The proposal is for the continued export of woodchips produced from silvicultural residues obtained from State forests in New South Wales and from forestry and clearing operations on private property.

Current operations

SEPL is currently licensed by the Minister for Resources to export woodchips produced in NSW from the four sources although only two of the four sources are being assessed in this report (see above). The company has continued to export woodchips produced from the designated sources throughout the assessment period. A copy of the woodchip export licence is at [Attachment 3](#). It is significant to note that the licence requires that logging residues and silvicultural residues are only to be utilised when available supplies of sawmill wastes are being used to the fullest extent possible. In the case of private property operations, the company is required to obtain specific approval for harvesting of each property.

SEPL claims that it does not produce woodchips and does not conduct logging or silvicultural operations itself. The company purchases chips from suppliers which chip offcuts and roundwood for sale to SEPL for export as well as to other local companies which manufacture various hardboard products. Some of these suppliers are part of the Boral group of companies. The majority are independent companies.

The current licence allows SEPL, an 80% owned subsidiary of Boral Limited, to export up to 500,000 tonnes of hardwood woodchips per annum from ship loading

facilities at Walsh Point on Kooragang Island near Newcastle, NSW. The most recent figures available in the supplement show that in 1991 SEPL exported approximately 350,000 tonnes of hardwood woodchips comprising approximately 230,000 tonnes of woodchips produced from sawmill wastes and 120,000 tonnes produced from logging residues, silvicultural thinnings and material from private property forestry operations. Of the latter amount, approximately 110,000 tonnes of woodchips were produced from logging and silvicultural residues from State forests and approximately 8,000 tonnes from roundwood were cut from private property forests. It is not possible to obtain separate figures of volumes for logging and silvicultural residues, because of the extent to which logging and silvicultural management are integrated in some forestry operations.

Chipping is undertaken at 22 locations shown in Attachment 4. Of these, 16 chippers operate as an adjunct to sawmill operations processing only sawmill residues. They do not currently chip roundwood. The six remaining operations chip roundwood from silvicultural and private property forestry operations. Of these, the Newcastle woodchip mill processes sawmill waste from regional mills as well as roundwood, while the Tea Gardens woodchip mill processes only roundwood.

The supply area

SEPL's operations which are the subject of this assessment extend over a large part of the central and mid North Coast Region of NSW from approximately Grafton to the north to Wyong in the south and from the coast to Armidale and Muswellbrook in the west. This area comprises 5.4 million hectares of forests of which about 2.2 million hectares (or 40%) are privately owned.

The supply area is based on there being an available woodchip resource within current and expected economic haulage distances to the point of export. This area, described in the EIS as the extended supply zone (ESZ), is shown in Attachment 1.

Any future proposal by Sawmillers Exports Pty Ltd to obtain woodchips for export produced from silvicultural residues or private property forests from outside the area described in the final EIS should be referred to DPIE. Any proposal considered environmentally significant should be referred for assessment under the *Environment Protection (Impact of Proposals) Act 1974*. SEPL has undertaken to conduct any studies necessary should it decide to source material from outside this area.

OBJECTIVES AND NEED FOR PROPOSAL

Stated objectives of the proposal

SEPL's apparent objective is to improve the overall quality of the eucalypt woodchips it purchases for export. The draft EIS stated that the project's main aim is to use sources of predominantly younger eucalypt roundwood obtained from the designated sources to raise the quality of the eucalypt woodchip mix which it sells on the international market. The company argued that the international competitiveness of Australian woodchips depends on both price and chip quality and that, due to the generally higher price of Australian woodchips, quality assumes

importance in maintaining the competitiveness of Australia's woodchip suppliers in the overseas market.

In the face of declining sawlog quotas being imposed by NSW State Forests, an additional objective of the proposal is to offset any reduction in the availability of sawmill and logging residues with woodchips obtained from private property operations, and to continue to export up to the 500,000 tonnes per annum limit of SEPL's overall licence agreement. This means that Boral, through SEPL purchasing woodchips and its other subsidiaries purchasing sawlogs, can make forestry and land clearing more attractive to private land owners. In this way it would also secure future supplies of sawlogs for its sawmilling operations.

SEPL is not seeking to vary its current export limit of 500,00 tonnes per annum.

Justification for the proposal

SEPL has put forward a number of arguments supporting its proposal. These include:

- purchase of woodchips from silvicultural operations enables State Forests of NSW to undertake direct management of forests which would otherwise not be undertaken because of cost;
- such silvicultural treatments for the State forests brings forward sawlog production by enhancing the growth in remaining trees (which would ultimately benefit all sawmill companies on the North Coast of NSW including those within the Boral Group of companies);
- woodchip quality must be enhanced for SEPL to remain competitive in world markets. The use of designated roundwood sources enables SEPL to blend the overall woodchip mix (sawmill wastes and roundwood) to produce higher quality woodchips. Sawmill wastes, when chipped, generally contain a higher proportion of rotten wood, chips below minimum size and oversize material than an equivalent volume of chips derived from roundwood;
- the available volume of sawmill wastes and logging residues is declining because State Forest of NSW are reducing sawlog quotas from Crown forests in order to reach sustainable harvesting levels in many areas. This means that to maintain current export woodchip volumes, or to achieve the total allowable export quota of 500,000 tpa, the company needs to broaden its range of chip sources;
- SEPL's ability to market pulpwood from private property allows other Boral sawmilling companies, such as Allan Taylor and Co, to facilitate access to supplies of private property sawlogs. This is achieved by SEPL only agreeing to buy private property pulpwood from owners who agree to sell sawlogs to Boral owned sawmills;
- private property landholders will have the potential to earn more from their forested holdings than has been possible under sawlog only harvesting;

- the ability to harvest timber commercially that is outside sawlog specifications provides an opportunity for regeneration of forests as commercially desirable regrowth forests;
- social and economic benefits accrue to the community as a result of the proposal maintaining employment and adding economic value to otherwise valueless waste products (SEPL's current operation provides employment for 122 people);
- Australia's balance of trade deficit in wood products would be greater without SEPL's export earnings;
- export of woodchips is the primary alternative to burning for the disposal of sawmill residues and environmental benefits therefore result from the proposal.

While it is accepted that woodchips derived from the designated sources are generally of higher quality than those from sawmill residues, several submissions cast doubt on SEPL's claimed inability to obtain export markets for woodchips of lower quality, particularly those derived from sawmill wastes and logging residues. This issue was not adequately discussed in the final EIS.

While the company believes that there are strong and valid arguments that the proposal is both needed and justified, public submissions raised uncertainty about the quantification of benefits that accrue to the community as a result of the proposal.

The benefits include employment and flow on benefits to local economies, export income and the proposal's ability to facilitate the management of State forest and private property areas for the long term production of sawlogs. On the debit side, there are some doubts about the adequacy of environmental controls and it is clear that, in the longer term, pressures on forestry resources are likely to transfer from publicly managed State forests to less well managed privately owned native forests. These concerns are addressed throughout this report.

The proposal also appears to be justified on the basis of sustainable pulpwood yield from the supply area. Estimates of potential sources of logging residues and silvicultural thinnings produced from State forest exceed 450,000 tonnes per annum (table 3.1 draft EIS and p.62 supplement) which is considerable more than the estimated use of these sources by SEPL in the year 2000 of 192,000 tonnes per annum (table 3.2 draft EIS). In 1989 the NSW Pulp and Paper Task Force estimated that sustainable yield from private property in north eastern New South Wales was of the order of 900,000 tonnes per annum (draft EIS p.48). Although no estimate of sustainable yield for private property in the supply area was provided in the draft EIS, the NSW Pulp and Paper Task Force estimate indicates that current pulpwood harvesting of private property forests is probably only a fraction of the possible sustainable yield.

It has been difficult to estimate the impacts that an increase in exports up to the 500,000 tonne per annum limit would have on the environment of private forests. Issues relevant to this concern considered in this report relate to the imperfect

knowledge of forests values, particularly of private forests, the influence of the income from woodchip sales on silvicultural practices, the effects of a possible future reduction of income from in sawmill and State forest logging residues and the effectiveness of existing controls on private property forestry and clearing operations. Any proposal to increase SEPL's woodchip export quota above the current 500,000 tonnes per annum should be considered environmentally significant and referred for assessment under the *Environment Protection (Impact of Proposals) Act 1974*.

The EPA considers that, on balance, the benefits should outweigh negative effects provided that proper environmental controls are maintained and that the proposal is justified.

ALTERNATIVES

Alternatives to the proposal can be divided into three categories:

- alternatives uses of designated resources;
- alternative woodpulp supplies for papermaking; and
- the alternative of discontinuing to use the designated woodchip resources.

Alternate uses of pulpwood

Many public submissions suggested alternatives uses of the designated wood sources. These included the use of designated sources for the production of sawn timber, composite timber products, local pulp and paper production and for the production of ethanol.

Alternative uses of pulpwood such as for the production of poles, board products, medium density fibreboard, particle board, garden mulch and firewood were discussed in the draft EIS (pp 59-60). The proponent noted that the demand for woodchips for the production of these products is considerably less than the available supply of woodchips and that limited opportunities exist currently for additional domestic processing of woodchips.

The proponent argued that the utilisation of this material for the production of any of the alternatives would have similar, if not identical environmental impacts. The proponent also pointed out that the proposal does not preclude the use of any of the designated material for alternative products. As noted in the State Forests of NSW submission, SEPL does not have long term supply agreements for woodchips and alternate uses will compete for these resources if viable markets can be established.

The EPA is of the view that this proposal does not preclude the future use of the designated sources for the production of alternative products and that preventing the use of this material for the production of export woodchip at this time is not warranted.

Alternatives to using pulpwood for papermaking

Alternative sources of fibre for paper manufacture, such as softwood chips, kenaf, bagasse, wheat straw and recycled paper mentioned in submissions were considered by the proponent in the supplement (p.75). It was claimed that the market for these products is limited and these sources are therefore not feasible alternatives to eucalypt woodchips.

While many public submissions raised the use of plantation grown timber as an alternative to the current proposal it should be noted that the proposal is partly based on the use of thinnings from historic eucalypt plantations within State forests. The proponent also notes that the time required for the establishment of plantations to produce an alternative source would be greater than the time period envisaged by the EIS. The Government's policy of reducing dependence on native forests by establishing hardwood plantations should, nevertheless, be pursued.

Alternative of not proceeding

The proponent argued that, if approval for the continuing use of the designated sources is not forthcoming, SEPL's capacity to improve woodchip quality to compete for woodchip export markets would be reduced, possibly resulting in the loss of jobs in the woodchip and sawmilling industries in the supply area. It was also argued that a possible loss of export markets would affect local, State and National economies.

The "do not proceed" alternative would also affect on the ability of State Forests of NSW to continue to manage forests for enhanced sawlog production and would potentially result in a slowing of timber rotation periods with a consequent reduction in the availability of future sawlogs.

The National Forest Policy Statement (page 19) acknowledges the community's right to "derive a return from felled wood that is unsuitable as sawlogs and is not required by domestic processors."

The EPA considers that the "do not proceed" alternative is not warranted as it denies the community an economic return on material derived from appropriate forest management practices.

GOVERNMENT POLICIES

National Forest Policy Statement

Forest resource use and management was a major sectoral issue within the 1992 National Strategy for Ecologically Sustainable Development (ESD).

Implementation of the ESD strategy in forest resource use and management is being undertaken through the implementation of the National Forest Policy Statement (NFPS). The NFPS was signed by all mainland States and Territories and the Commonwealth Government in December 1992. The NFPS focuses on achieving the best mix of conservation and commercial uses of native and plantation forests in an

integrated planning and management framework. The NFPS (pp. 19-20) has a number of aspects which are relevant to the SEPL proposal. The NFPS states that:

"The issues of efficient use and value-added processing is particularly relevant to the large volumes of pulpwood that are produced during integrated harvesting operations in native and plantation forests. At present the Commonwealth Government approves the export of unprocessed wood and woodchips from integrated harvesting operations and sawmill residues, subject to controls aimed at ensuring that environmental values are protected, that the price obtained is consistent with prevailing world market prices, and that unprocessed wood is not exported if it is commercially feasible to process and add value to it in Australia. The export of woodchips derived from integrated harvesting operations and sawmill residues enables the community to derive a return from felled wood that is unsuitable as sawlogs and is not required by domestic processors" (NFPS p.18).

To encourage efficient use and value adding of existing forest resources, Governments agreed that:

- "The Commonwealth will remove controls over the export of unprocessed public and private plantation wood, subject to the application of codes of practice to protect environmental values.
- "Approvals for the export of woodchips from public and private native forests for terms longer than the current annual renewal period will be considered where those forests are covered as part of a comprehensive regional assessment and a Commonwealth-State regional agreement. These longer term approvals will be consistent with other Commonwealth policies and commitments.
- "Commonwealth-State regional agreements based on comprehensive regional assessments or agreements between a State and the Australian Heritage Commission on the management of forests listed on the Register of the National Estate (including the application of harvesting codes of practice) will constitute the basis on which the Commonwealth will meet its legislative obligations under s.30 of the *Australian Heritage Commission Act 1974*. For areas not covered by comprehensive regional assessments, existing processes and annual export approvals will apply.
- "In relation to pulpwood production from native forests, the Governments will ensure that domestic processors are given the first opportunity to purchase the resource at a price acceptable to the grower. This policy will come into effect when consideration is given to major changes or renewals to wood resource access" (NFPS p 19).

Under the NFPS (p.24) comprehensive regional assessment is identified as a process to collect and evaluate information on environmental and heritage aspects of forests in a region in both public and private tenure. The comprehensive regional assessment process is to form the basis for enabling the Commonwealth and States to reach a single agreement relating to their obligations for forests in a region. An outcome of the agreement could be the establishment of comprehensive, adequate and representative reservation systems using agreed criteria.

There are currently no plans to undertake a comprehensive regional assessment over the SEPL supply area although one has been mooted for the far north-eastern forests of NSW. Whether this might overlap the SEPL supply area is not clear. The future undertaking of a comprehensive regional assessment is dependent upon the NSW Government inviting the Commonwealth to participate in the process.

A number of submissions identified the comprehensive regional assessment process as a means of properly identifying and reserving areas of high conservation value in the SEPL supply area. It was also seen as filling a major gap in knowledge about private forests and providing a basis for better planning arrangements. It could provide a framework for establishing inventories of forests on private lands and the species in those forests.

The EPA considers that the comprehensive regional assessment process is an appropriate mechanism to collate information on the nature of private property forests and State forests in the supply area and to identify conservation strategies that should be adopted. A comprehensive regional assessment would enable governments to bring together, in a consolidated form information necessary to undertake planning and conservation programs over a region as large as the SEPL supply area.

Recommendation 1: The Commonwealth Government should pursue with the New South Wales Government the undertaking of a comprehensive regional assessment in northern eastern New South Wales. The comprehensive regional assessment should cover all of the areas of woodchip supply.

The EPA believes that to ensure the maximum economic return is gained from domestic processing by adding value to forest products, no long term approval should be granted to SEPL which may result in the export of resources which may be able to be processed domestically. Long term approvals should not be given that might prejudice implementation of the NFPS or conducting of a comprehensive regional assessment.

The EPA considers that at least until as a comprehensive regional assessment is undertaken covering the woodchip supply area, an annual report of SEPL's woodchip export operation should be provided to the Department of Primary Industries and Energy. The report should contain information relating to the export of woodchips from all sources including the volumes of woodchips produced from private property sources and silvicultural residues and the forest locations from which pulpwood was obtained. Information relating to the intended use of private land harvested for pulpwood exported by SEPL should also be included.

The existing licence under which SEPL exports woodchips contains various conditions relating to the protection of the environment and compliance with Commonwealth environment and heritage protection legislation. Most conditions are common to other woodchip export licences issued by the Minister for Resources although some conditions were included specifically for the licences issued to SEPL for the October 1993 to June 1994 and July to September 1994 periods. The EPA considers that the intent of all existing licence conditions should be retained in any future licences issued to SEPL.

Recommendation 2: Licences for the export of woodchips should remain subject to annual renewal until such time as forests within the Sawmillers Exports Pty Ltd supply area are covered by a comprehensive regional assessment and a Commonwealth-State regional forest agreement.

At the 1991 Special Premiers Conference it was announced that:

"Leaders and representatives noted that State and Federal Governments share the objective of phasing out woodchip exports from native forests in favour of downstream processing of the resource (pulp and paper mills) by the year 2000, such projects being subject to environmental and economic assessments. Woodchip export approvals would be considered on a case by case basis with full regard to the objective of ensuring the Australia achieves the fullest possible return from its forest resources."

Recommendation 3: Long term agreements on the supply of woodchips between the Commonwealth and Sawmillers Exports Pty Ltd or its successors, should recognise the undertaking made by the Commonwealth and State Governments to phase out woodchip exports from native forests in favour of downstream processing by the year 2000.

Environmental impact assessment of NSW forestry

A program of environmental impact assessments, which addresses the environmental impacts of logging in State forests, is currently being conducted by State Forests of NSW under the *Timber Industry (Interim Protection) Act 1992*. Fourteen assessments are programmed to be conducted by the end of 1995. Few have been completed so far. The program requires detailed flora and fauna surveys for study areas, the data from which is used to modify management practices for specific forests. Priority is understood to have been allocated to management areas which contain substantial areas of potentially sensitive old growth forest. Coverage of the EISs and estimates of probable completion dates are at Attachment 5.

Several of the submissions received criticised State Forests of NSW policies and practices generally, claiming that logging and forest management did not comply adequately with the policies, codes and legislative requirements that are in place. The NSW EIS program and individual assessments were also criticised.

It is not the purpose of this EIS or this assessment report to review State Forests of NSW operations although a number of comments and recommendations have been made which relate to matters for which NSW is responsible. The reviews are being done through the NSW EIS program.

It is unfortunate that a large part of the supply zone is not covered by a completed State EIS and that some parts are not planned to be covered by an EIS being prepared in the current series. It is also unfortunate that the State EIS program cannot cover private property forestry. The lack of such prior assessments has left large gaps in the knowledge of the natural forest values of the SEPL supply area and in the understanding of the impacts of forestry practices generally on these values.

This EIS of SEPL's operations, with its limited scope, does not provide a framework against which the necessary studies can be conducted. It would be unreasonable to ask SEPL to conduct broad scale studies over areas where it had little responsibility or where it was only partly responsible for forestry operations. Priority should be given to completing environmental impact assessments under the NSW forest EIS program over woodchip supply areas, particularly those likely to undergo extensive silvicultural management operations. The alternative mentioned previously would be, of course, to conduct a comprehensive regional assessment.

Recommendation 4: The Commonwealth Government should request that the New South Wales Government give priority to completing environmental impact assessments under the New South Wales Timber Industry (Interim Protection) Act 1992 over woodchip supply areas, particularly those likely to undergo extensive silvicultural management operations.

Climate change and Global Warming

The National Greenhouse Response Strategy (NGRS) (1992) adopted as an interim planning target:

"to stabilise greenhouse gas emissions (not controlled by the Montreal Protocol on Substances that Deplete the Ozone Layer) based on 1988 levels, by the year 2000 and to reduce these emissions by 20% by the year 2005... subject to Australia not implementing response measures that would have net adverse economic impacts nationally or on Australia's trade competitiveness, in the absence of similar action by major greenhouse producing countries."

The Strategy has specific objectives to conserve and enhance the sink capacity of Australia's natural environment and minimise greenhouse gas emissions from the natural environment caused by human activities. A principle strategy to achieve these objectives, among others, is to adopt land use and management measures to increase the amount of vegetation in forests or elsewhere, including through reafforestation, rehabilitation and an expanded plantation base.

Several submissions criticised the way global warming issues were dealt with in the draft EIS and claimed that this proposal failed to comply with the objectives of the NGRS. In particular conclusions made regarding the impact of the proposal on carbon release and storage were criticised.

SEPL responded to this criticism by quoting the RAC Forest and Timber Industry Inquiry conclusions (RAC 1992) that carbon storage is maximised by lengthening timber rotation times and producing products that are retained for long periods of time such as sawn timber products. The RAC report noted that the production of woodpulp does not enhance carbon storage.

SEPL argued that while pulp is the end product from this operation the objective of the proposal is in part to enhance the growth of sawlogs. This increase in forest productivity increases the proportion of timber remaining in long term storage such as sawn timber products and poles. While definitive information was not given, the proponent estimated that carbon storage may be enhanced by the proposal.

The EPA is unable to form a view on this aspect of the proposal from the information contained in the final EIS or from subsequent consultation with expert bodies. Two things are clear however: Chipping of sawmill wastes and logging residues would seem preferable to burning as it would allow the productive use of this material for needed wood and pulp based products and avoid the primary release of CO². Cutting timber for woodchips, particularly where forested land is being cleared for agricultural and pastoral purposes is likely to have a negative effect on the CO² balance. Further research would be needed to determine the contribution to greenhouse gases associated with the production of woodchips.

Several submissions also pointed out that potential impacts on forests resulting from global warming had not been considered in the draft EIS. The proponent acknowledged in the supplement (pp.23-24) that the distribution of forest species may change in response to global warming. It was noted in the supplement that the RAC Forest and Timber Industry Inquiry concluded that the adequacy of the existing network of conservation reserves will need to be carefully evaluated in the light of the predicted impact of regional changes in the conservation status of species and habitats. Those responsible for the future allocations of conservation reserves should take this into account. In this regard completion of comprehensive regional assessments over the SEPL supply area would assist.

HERITAGE VALUES

The impacts of the SEPL operation on other forest values were raised in public submissions including values associated with wilderness and Aboriginal and European cultural heritage. Many of the areas exhibiting these values have been previously recognised and are included in conservation schemes such as the Register of the National Estate and in World Heritage areas and within State Reserves and National Parks.

Wilderness

Several public submissions claimed that logging would affect wilderness areas, while others recommended that areas nominated as wilderness should be excluded from logging until wilderness nominations are resolved. These claims would appear not to be substantiated if relevant NSW legislation is observed.

There are several substantial areas within the boundary of the SEPL supply area that are included in wilderness nominations under the *NSW Wilderness Act 1987*. These areas are described briefly in Section 6 of the draft EIS.

SEPL responded to concerns regarding wilderness in section 3.2 of the supplement noting that 'by definition, operations which take place in previously logged areas do not take place in wilderness areas'. The EPA, however, considers that as most definitions of wilderness allow for minor disturbance by colonial or modern technological society, some areas of high wilderness value may have experienced historic minor selective logging.

Forestry is precluded from nominated wilderness areas under the *NSW Timber Industry (Interim Protection) Act 1992* pending the completion of assessments under

of the Wilderness Act. Nominated wilderness areas are detailed in Schedule 2- "Land subject to proposals under Section 7 of the *Wilderness Act 1987* is also subject to moratorium on logging operations" of the *Timber Industry (Interim Protection) Act 1992*. These areas primarily encompass National Parks but also include portions of State forests.

The EPA is concerned that recent wilderness nominations under Section 7 of the Wilderness Act 1977 are not included in moratorium areas. Wilderness values on private property in NSW are also largely unknown and wilderness declaration over private property is subject to the consent of the landowner.

Recommendation 5: Export licences should exclude woodchips produced from pulpwood harvested in areas subject to nominations for wilderness status accepted under New South Wales legislation until such time as the nominations are resolved by the New South Wales Government.

Old-growth

Under the National Forest Policy (p.11) Governments have agreed to a strategy to conserve and manage areas of old-growth forests as part of a comprehensive, adequate and representative reserve system. Governments have also agreed to develop criteria for old-growth forests and to undertake assessment of forests for conservation values, including old-growth values. For old-growth areas, the nature conservation reserve system will be the primary means of protection. Governments have also agreed that, until assessments are completed, forest management agencies will avoid activities that may significantly affect those areas of old-growth forest that are likely to have high conservation value. The Minister for the Environment, Sport and Territories has stated that old growth forests that are likely to have high conservation value should not be logged until assessments are completed.

A number of submissions were concerned that the proposal would result in the continued harvesting of old-growth forest. Submissions also questioned whether aspects the proposal were in accordance with commitments made in the NFPS.

The supplement (p.14) claimed that the NFPS "moratorium" does not extend to all old-growth forests. It also claimed that existing restrictions on the areas of old growth forest available for sawlog operations and the moratorium on nominated wilderness areas under the *Timber Industry (Interim Protection) Act 1992* limit the places where these operations can occur to areas less likely to have high conservation values.

The proponent claimed in the supplement (p.15) that the only operations to obtain roundwood for chips, which could occur in old-growth forests, are the removal of cull trees which will be integrated with, or immediately follow, sawlog operations. Cull trees are commonly the types of trees that contain wildlife habitat.

The use of cull or habitat trees is considered later in this report.

As old-growth forest provides only a very small proportion of the chips purchased by SEPL, discontinuing purchase of such material should have little or no affect on SEPL's operation. In general the EPA believes that all woodchipping operations

should avoid old-growth in areas of high conservation value until policy issues on the use of these resources are resolved between the Commonwealth and the NSW Governments. Old-growth is defined in the NFPS.

Recommendation 6: Old-growth forests that are likely to have high conservation value should be protected in accordance with the National Forest Policy Statement. Woodchips produced from old-growth forests should not be exported until such time as there is agreement between the Commonwealth and the New South Wales Government on the management of this resource.

Biological Diversity

Many respondents noted that Northern NSW contains areas of high biological diversity and expressed concern that the SEPL operation may affect their values. Many of the submissions also pointed out the Commonwealth has international obligations under the Convention on Biological Diversity which was signed by Australia in 1992.

Obligations under the Convention extend to, among other things, enhancing knowledge and understanding of biological diversity and the impacts on it; conducting environmental impact assessment of projects, programs and policies that are likely to have a significant effect on biological diversity; and taking measures to preserve biological diversity through the conservation of ecosystems, natural habitats and species in their natural surroundings.

The proponent did not respond to concerns raised in submissions in the supplement although specific arguments relating to the protection of biological diversity made in the draft EIS were expanded in relevant sections of the supplement.

The draft EIS (section 7.6 p. 158)) argued that measures to protect stream ecosystems, rare, threatened and endangered species, and wildlife movement corridors as well as preventing the introduction of exotic species and controlling cumulative effects of private property clearing will ultimately result in the conservation of biological diversity in the supply area.

The proponent claimed that the potential long term impacts on forest ecosystems and on native fauna were difficult to assess on the basis of existing knowledge. The draft EIS claimed that there is little likelihood that the project would adversely affect native forest fauna in broad terms, provided that harvesting operations causing a substantial decline in the densities of tree hollows, significant reductions in the numbers of logs on the forest floor or significant alterations to forest structure are not imposed throughout large areas of native forest. It was also noted by the proponent that the SEPL supply area contains substantial areas of native forest that are reserved from any logging activities.

It was also claimed that, given current management of State forests, which includes the reservation of native ecosystems for fauna conservation, compared to other land uses such as land clearing, harvesting operations may be regarded as relatively benign. This does not necessarily apply, of course, to private property operations.

The EPA considers that there is insufficient information available describing biological diversity in the SEPL supply area and that the basis on which to protect areas of high biological diversity is therefore limited. While controls to protect the ecosystems presently described in the final EIS may go some way to preserving biological diversity it is not possible to predict how effective these measures may be or to monitor changes in biological diversity resulting from the proposal. It is essential that satisfactory baseline information be assembled whenever opportunities present themselves. Requiring surveys before logging of private forests and provision of such information to DPIE in applications would be one such opportunity. The proposed comprehensive regional assessment would be another. Surveys of forests should take account of and satisfy to the extent that is practicable information that would assist in extending the knowledge of the biodiversity of the area being surveyed.

Register of National Estate

Table 6.1 of the draft EIS shows areas within the boundary of the supply area which are listed on the Register of the National Estate or included on the interim list of the Register. Many of these sites are included because of their natural environmental values.

Several submissions were concerned that the SEPL proposal would affect National Estate values in the supply area, including values not yet identified. A number of submissions requested that export approval be withheld until adequate assessment of National Estate values had been undertaken for the supply area.

Advice received from the Australian Heritage Commission stated that the low number of forested places on the Register within the region outside national parks is not a reflection of the likely number of areas containing national estate values. The Commission has deferred consideration of natural places within the region pending a regional assessment of the area which will provide a context for its assessment of individual areas. The Commission also noted that forestry operations on private land adjacent to a listed area may have an adverse impact on national estate values including weed invasion, increased fire frequency and disturbance of faunal corridors.

The proponent argued (draft EIS p. 49) that, due to their requirement that no roundwood is obtained from areas on the Register of the National Estate or on the interim list of the Register, the requirements of the *Australian Heritage Commission Act* (1975) would be met. SEPL requires chip suppliers to confirm whether areas to be harvested are listed on the Register and, based on the current extent of listing, will not accept material from listed areas. SEPL regularly consults with the Commission to ensure that it is kept up to date with current listings or register entries.

The proponent also identified (supplement p. 55) the need for preliminary consultation with the Commission and others regarding approval for private property operations.

On the basis of the information presented, it would appear to the EPA that existing areas listed on the Register of the National Estate, or interim register, are adequately protected by the measures outlined in the final EIS. However, the proposal may still

effect areas with high national estate value until these values are properly assessed and suitable areas entered on the register. A comprehensive regional assessment covering the SEPL supply area would go a long way towards resolving this problem.

Recommendation 7: Export licences should specifically exclude woodchips produced from pulpwood harvested from an area that is on the Register of the National Estate.

World Heritage Areas

A number of submissions claimed that the proposal would affect World Heritage areas.

The boundary of the SEPL supply area encloses part of the existing Australian East Coast Temperate and Sub-Tropical Rainforest World Heritage Property which consists entirely of secure conservation reserves from which all logging is excluded. In addition to the existing World Heritage Area, in 1992 Australia nominated an area known as the Central Eastern Rainforests which includes the existing World Heritage area as well as additional areas, some of which are in the supply area. These additional areas are also in secure conservation reserves. No existing or formally nominated World Heritage areas are located on private property.

The International Union for the Conservation of Nature, as part of its evaluation of the 1992 nomination of additional World Heritage areas, requested further evaluation of parts of the Carrai Plateau and Mt Seaview areas and extensions to the Barrington Tops National Park. This re-evaluation is currently underway.

The submission from the North East Forest Alliance (NEFA) noted that it had proposed a draft nomination which it referred to as the "Central Great Escarpment Forests of Australia" for World Heritage listing. This area contains part of the SEPL supply area. In accordance with Schedule 8 of the Intergovernmental Agreement on the Environment, the NEFA draft nomination has been referred to NSW for comment.

The EPA acknowledges that pulpwood harvesting adjacent to world heritage or interim world heritage areas might effect those areas in some instances. Based on the information available it is not possible to determine where this is happening or might happen. In this regard, it should be noted that the World Heritage Convention does not preclude economic activity within the listed areas. It is the EPA's view, however, that there is a need to afford interim protection to areas subject to draft nomination to the International Union for the Conservation of Nature for inclusion to the World Heritage List, while nominations are assessed. This is considered a matter for the NSW Government and outside the control of the proponent.

In the case of private property operations, information provided to DPIE should include proximity of the property to any World Heritage or nominated World Heritage area and the relationships between the areas.

Aboriginal Heritage

The draft EIS notes that there are over 3,500 Aboriginal cultural sites listed within the study area on the NSW National Parks and Wildlife Service register. A number of sites are also listed on the Register of the National Estate, or interim register, because they contain Aboriginal cultural sites. Sites listed on the Register of the National Estate or interim list would be protected under the *Australian Heritage Commission Act 1975*.

A number of submissions were concerned that the proposal would affect Aboriginal relics and cultural sites. Concern was also raised about the poor coverage in the EIS of existing State government controls regarding Aboriginal sites. The identification and protection of new sites was also raised as an issue.

Aboriginal relics and places are protected under the *NSW National Parks and Wildlife Service Act (1974)*. A relic is defined in the Act as any deposit, object or material evidence relating to the indigenous inhabitants of NSW. Under the Act it is illegal to damage, deface, or destroy a relic or Aboriginal place without the consent of the Director of the National Parks and Wildlife Service. The Act also requires that anyone who discovers a relic must report the discovery to the Director within a reasonable time.

The *Aboriginal and Torres Strait Island Heritage Act 1984* is also relevant to the proposal. It provides that if an artefact or land which is significant to Aboriginal people is threatened, an Aboriginal person or somebody acting on their behalf may make representations to the Commonwealth Minister. Following investigations, the Minister may decide to take action to protect the artefact or place. This Act overrides the provisions of State heritage Acts and is administered by the Aboriginal and Torres Strait Islander Commission.

The proponent argued that impacts on Aboriginal heritage will be avoided by existing controls and guidelines relevant to SEPL's operations. These include the requirement on local and state government authorities to consider Aboriginal heritage in considering applications for development consent or other approvals required under the *NSW Environmental Planning and Assessment Act 1979*. Information regarding Aboriginal heritage will also be derived from State Forests of NSW EIS process and requirements to avoid impacts incorporated into management plans.

SEPL has also undertaken to ensure that heritage studies are conducted within all areas of private land that are to be used to supply timber to the company. SEPL have also undertaken to liaise with Aboriginal land councils to establish the views of Aboriginal people regarding heritage issues associated with harvesting operations on private property.

The EPA is of the view that the requirements of existing legislation described in the final EIS should be sufficient to ensure Aboriginal heritage is not significantly affected by the proposal.

Recommendation: 8 Sawmillers Exports Pty Ltd should undertake surveys of Aboriginal heritage on private land before harvesting occurs in accordance with undertakings given in the draft EIS.

SOCIO-ECONOMIC NATURE OF THE INDUSTRY

A general overview of the economic environment undertaken as part of the assessment is described in Section 6 of the draft EIS. The overview includes all of the SEPL operation and is intended to provide a basis for consideration of the value of designated sources. The overview focused on areas which are most likely to supply the greatest volumes of roundwood for the proposal and included the local government areas of Cessnock, Dungog, Gloucester, Great Lakes, Greater Taree, Hastings, Kempsey, Nambucca, Walcha and Wyong.

Value of woodchip operations

Operational figures for 1992/1993 provided in the supplement (p. 69) indicated that the value of the SEPL export woodchip operation was approximately \$27.6 million. The purchase of chips from State Forests of NSW and chip suppliers (including delivery costs) accounted for \$21.2 million. A further \$1.2 million was expended on other costs such as stock piling and ship loading. The final EIS considered the overall value of the SEPL operation rather than the individual values of the designated sources.

The draft EIS claimed (p.169) that, by using accepted multipliers for the sawmilling industry, the likely contribution of SEPL's woodchip export operations to the regional economy could be of the order of \$46 to \$60 million per annum. The EPA has accepted these figures as broadly indicative of the value of the overall operation although they were disputed in several submissions.

Australia recorded a deficit in the balance of trade in wood products for 1990/1991 of \$1350 million. SEPL's export sales of \$29 million in the same period were an offset of approximately 2% to the trade deficit.

Woodchip pricing

A number of submissions criticised the proposal on the basis of the low economic returns from the sale of export woodchips and the need to provide a realistic return on the use of a public asset. The supplement (p.69) recognised the need to increase Australia's export of a more "value added" commodity.

The Department of Primary Industries and Energy oversees selling prices through licence applications. Selling prices should, of course, reflect the value of the resource.

In the Northern NSW region at present, and in Australia generally, there are limited opportunities to add value to potential woodchips production, although it is the Federal Government's policy to encourage the development of value-adding industries and to phase out the export of woodchips by the year 2000. In the absence of current opportunities, the EPA considers that the export of woodchip in excess of domestic demand and which would otherwise be burnt or left on the forest floor could continue in the short term.

Employment

Economic areas within the supply area can be best described in terms of the local government areas mentioned above. The 1991 raw population figure for these areas was 318,474. Forestry activities provided some 8.3% of all employment in the primary sector and sawmilling 14.6% of all employment in the manufacturing sector in these areas. The area accounted for 18% of all NSW employment in the forestry sector and nearly 7% of all wood product manufacturing employment in NSW. It is noted that, due to declining sawlog quotas determined by State Forests, employment in forest industries in NSW is declining.

The draft EIS states that total employment involved in the SEPL operation is estimated at 122, consisting of:

Mill employees required for chip production	64
Haulage/ transport employees	47
SEPL staff (direct employees)	11

The EIS claims that the use of accepted multipliers would suggest that a total of around 244 jobs are supported directly and indirectly, by the entire SEPL operation. No attempt was made to estimate the numbers of staff employed directly as a result of approval to export woodchips derived from the designated sources.

It is understood (supplement p 73) that denial of access to SEPL to woodchips from the designated sources would not in itself bring about a closure of SEPL's woodchips operations, although it would affect the volume of the woodchip exports and perhaps the access to markets. There would also be some reduction in employment.

A summary of the economic impacts of the SEPL operation is shown in Table 7.1 of the draft EIS.

If SEPL woodchip operations were to cease the loss of both direct and indirect employment opportunities might be considered significant at a local level but might be regarded as small in a regional context.

Transport operations

All transport of roundwood and woodchips is handled by road. Roundwood is transported using timber jinkers and modified flatbed semi-trailers. Transport of roundwood from the forest to chip processing plants generally involves the use of roads that are the responsibility of State Forests of NSW and local and State Governments. The impact of the construction and use of these roads are being assessed in detail in the State Forests of NSW EISs program. This is considered to be a matter over which SEPL has no control or responsibility.

SEPL has not addressed transport issues associated with private property roundwood harvesting including assess to individual private property because woodchips "will be drawn from such a widespread supply zone and will involve such small volumes" (draft EIS p.117).

The proponent concluded that the proposal would not increase the overall volume of woodchips currently able to be exported nor would it markedly change the nature of the materials carried. The transport related impacts associated with the proposal should not be significantly different from the current situation and subsequently do not warrant additional assessment.

The EPA acknowledges these conclusions but notes that the level of impact from transportation will increase if SEPL expands its operations to meet its licensed export limit of 500, 000 tonnes. Transportation impacts should remain low in a regional context.

A number of submissions noted that rail transport was considered as an option in the 1977 EIS prepared by SEPL into the establishment of a "North Coast Woodchip Export Project". The draft EIS (Section 4.3.4) and the EIS supplement (p.59) state that rail transport is not viable at present due to a lack of existing rail infrastructure. Other submissions also supported a review of the viability of rail transport and further exploration of the environmental benefits associated with rail transport. The Department of Primary Industries and Energy should consider alternative transport in the issuing of any 1995 woodchip export licences.

IMPACTS ON THE NATURAL ENVIRONMENT

Forest covers about 19% of the land area of NSW. There are approximately 15 million hectares of forests in the State, about 98% of which is native forest. Approximately 9.7 million hectares of the forest are publicly owned of which 2 million hectares are held in reserves or national park from which logging is excluded, 3.7 million hectares are State forest managed by State Forests of NSW under multiple use objectives including the supply of timber. The remainder is not actively managed for forestry purposes. Approximately 5.2 million hectares or about 35% of the State's forests are held in private tenure.

The SEPL supply zone (including the extended supply zone) covers an area of 5.4 million hectares of forests at the southern extremity of the sub-tropical climatic zone and the northern extent of the temperate climatic zone. It straddles the Great Dividing Range and extends into the coastal hinterland to the east. The topography and the nature of the forests of the supply area are, therefore, quite varied.

All public forests subject to the proposal are within the State Forests of NSW Central and Northern Regions. These combined regions are larger than the SEPL supply zone. Table 3.4 of the draft EIS summaries the areas of forest in various tenures within this wider region. There is no specific information presented in the Final EIS which describes forests tenures in the supply area. The table indicates that there are approximately 2.553 million hectares of forest on Crown lands of which approximately 1.467 million hectares are State forests. 2.310 million hectares are held in private tenure while .53 million hectares of forests are within National Parks and other reserves.

Information on the environment of the area provided in the draft EIS was mostly broad and general. This drew considerable criticism in submissions which commonly called for the proponent to provide detailed information on and conduct

extensive studies of the area. Although better information could have been provided in some instances, the EPA concluded that, in view of the broad extent of the supply area, the diverse nature of pulpwood production, the general lack of available information about the environment of many parts of the area, particular about private forests, and the limited scope of the assessment, it would have been unreasonable to expect the proponent to undertake the broad scale studies demanded.

Broad scale information can only be assembled by collecting, analysing and storing information on individual areas in some central geographical information system, such as the Department's ERIN system, by the NSW program of environmental impact assessments of State forestry operations or by a comprehensive regional assessment. Information at a level of detail necessary to support the preparation of logging or management plans for individual areas of forest will have to be collected and analysed as the need arises. Recommendations contained in this report are based on this conclusion.

Forest types

A number of submissions pointed to various omissions, duplications and errors in the draft EIS's listing of forest types. Appendix 3 of the supplement contains an amended listing of forest types in the supply area.

The draft EIS stated that there are a total of 65 forest types in 10 leagues recognised by State Forests of NSW within State forests of the supply area. Of these, 23 forest types have less than 1 per cent of their total area currently conserved and 16 have less than 5 per cent of their total area conserved. These figures were disputed in a number of submissions and have been qualified by the proponent in the supplement (p.31).

Forest types can be combined into a smaller number of groups which may be termed forest associations which combine forest types of broadly similar structure and species composition. It is claimed in the draft EIS that a total of eight associations are recognised in the supply area; these include Rainforest, Blackbutt, Coastal Moist Hardwood, Coastal Dry Hardwood, Dry New England Hardwood, Moist New England Hardwood, Woodland, and Miscellaneous and Non-Commercial. The nature of these associations is described in section 5.5 of the draft EIS and the extent of each association are summarised in Appendix 13 of the draft EIS.

Criticism was made in submissions regarding the system used by the proponent in the draft EIS to classify forest types. Some submissions claimed that an ecological classification system which relates vegetation types to other environmental parameters would have been superior to the use of the State Forests of NSW system. The proponent argued (draft EIS p. 29) that no classification system for forests was ideal and that the use of the State Forests of NSW forest types was appropriate because it is the most comprehensive and detailed system available for the supply area.

The EPA would prefer to see an ecological classification system used but given the lack of information available of this type for the area, accepts that this is currently

not possible. Classification based on this system may be possible if a comprehensive regional assessment is conducted over the supply area.

Concern was raised in submissions that the proposal would affect poorly conserved forest types. Other submissions questioned the adequacy of existing conservation measures in the SEPL supply area to conserve forest types. The possibility that SEPL's operation, particularly on private property, would affect poorly conserved forest types was of special concern to some.

The International Union for the Conservation of Nature has recommended that a minimum of 10% of the pre-European area of all environments is required for adequate conservation. The supplement (tables 1 and 2 of Appendix 3) provides details of forest types in the supply area which currently have less than 10% of their area conserved within the supply area. These tables also relate forest types classified under the State Forests of NSW system to the forest types recognised by NPWS. The need to limit logging in forests with high conservation priority is acknowledged by the proponent in the draft EIS (p. 202) and in the supplement (p. 31).

In State forests, protection of poorly conserved forest types is the responsibility of State Forests of NSW. In private property forests there appears to be no central responsible authority. Here poorly conserved forests could be identified during pre-harvesting surveys required by SEPL or perhaps by export licence conditions. This information could be referred to the NSW Parks and Wildlife Service for analysis and advice, and to DPIE as part of the application to log the property involved.

This approach of course, does not address the broad picture. The NPWS submission on the draft EIS noted that a community cannot be considered adequately reserved unless it is adequately conserved throughout its range. It suggested, based on previous research, that north eastern NSW be divided in three geographic zones or subregions, that is northern, central and southern regions. For example EF 202 *E. Robusta* (State Forests of NSW type 30) has a total proportion conserved of between 10 and 25% but less than 1% in the northern region and 5% in the central region. Hence the proposed operation should not occur in this forest type in the northern and central regions. Conservation of forest types based on distribution within sub-regions is supported by the EPA.

In private property forests, though, information would only be patchy because of the opportunistic nature of forestry and clearing operations. Adequate information for the conservation of forest communities can probably only be obtained through a comprehensive regional assessment.

Recommendation: 9 Applications to export woodchips from harvesting or clearing private property should include information about forest types contained in the areas to be harvested or cleared. In considering applications, the Department of Primary Industries and Energy should take into account the recommendation of the International Union for the Conservation of Nature that 10% of the pre-European extent of forest type should be conserved in secure reservation areas across its range. Where a forest type is not adequately reserved, advice should be obtained from the Australian Nature Conservation Agency and the New South Wales National Parks and Wildlife Service and taken into account in any decision by the Department or the Minister for Resources on the application.

Forest structure

The impacts on forest structure and changes in the plant species composition resulting from the proposal were raised in submissions as matters of concern. The supplement (p.33) acknowledges that the proposal will affect forest structure, which is of course an objective of silvicultural management. In general the effect of thinning over a rotation would be a more open stand with fewer and younger trees.

The EPA accepts that changes in forest structure are a consequential impact of the management of State forests for sawlog production. The EPA would be concerned, however, about any situation where this management resulted in the loss or degradation of poorly conserved forest types or plant species.

The impact of logging on the distribution and abundance of plant species is addressed in section 5.4.6 in the supplement. Unpublished research by State Forests of NSW suggests that the floristic richness of logged plots was consistently equal to or greater than that of unlogged plots. However 5-10% of flora species which were present in unlogged areas were found to be absent in logged areas. The research also indicated that an estimated 25-30% of the total species sampled occurred primarily or solely in habitats which would be unaffected by logging and that logged areas have an important role to play because floristic richness remains high and logging may help maintain disturbance adapted species.

The EPA considers that there is insufficient information in the final EIS to form a view as to whether pulpwood harvesting will significantly affect plant species composition in the supply area. It is considered that where harvesting takes place at intervals shorter than major natural disturbance events, such as storms or fire, then plant species composition could change permanently in forested areas. This would be of concern where rare or endangered species are likely to be affected.

In general, although major species are well documented knowledge of the flora within native forests is quite incomplete. Much of the information collected can be hard to locate or to obtain, a problem which commonly arises when trying to identify whether endangered plant species might be present in an area.

It is the view of ANCA that the final EIS does not overcome the need to continue individual private property assessments. ANCA conclude that approval for harvesting or clearing private property should continue on a case by case basis with ANCA retaining its role in approving areas with regard to species listed under the *Endangered Species Protection Act (1992)*.

Recommendation 10: In accordance with the undertakings made by the proponent, flora surveys should be undertaken in accordance with guidelines and by a scientist acceptable to the Australian Nature Conservation Agency before any harvesting of pulpwood for the production of woodchips for export is conducted. In regard to harvesting pulpwood for export obtained from silvicultural residues, there should be an agreement or understanding between the Australian Nature Conservation Agency and State Forests of New South Wales in regard to such surveys.

An overview of the native fauna in the supply area is presented in section 5.6.3. of the draft EIS and an amended list of species within the supply area can be found in

Appendix 4 of the supplement. There are a substantial number of forest dependent native fauna species within the supply area which are susceptible to impacts caused by habitat modification through harvesting operations. Fauna species are typically associated with major vegetation communities or broad habitat groups, rather than with specific, narrow vegetation communities or species associations. The main habitat groups include moist hardwood communities which typically support the highest densities and species diversities of native fauna, dry hardwood communities, woodland communities and riparian habitats.

It is estimated in the draft EIS that there are 37 species of terrestrial mammals within the supply area, including both mainland monotremes, 10 of the 48 extant dasyurid mammals, 2 of the 8 extant bandicoots, the common wombat, 12 of the 42 macropods and 10 of 52 native rodents in mainland Australia. Several terrestrial mammals are considered almost endemic to this region of NSW, or have restricted ranges of which the supply area is a significant part. Species in this category include the Parma Wallaby, the Brush-tailed Rock Wallaby and the Hastings River Mouse.

A total of 11 arboreal mammals are known from the supply area including 9 possums, the koala and the Brush-tailed Phascogale.

Twenty six of the approximately 70 microchiropteran bat species, as well as 3 of the 8 megachiropteran bats in mainland Australia are present in the supply area. Appendix 15a and 15b of the draft EIS describes terrestrial and arboreal and aerial mammals within the supply area.

Approximately 400 Australian bird species are found within the supply area of which 156 are forest dependent. It is expected that 116 reptile species occur in the supply area, although of these, only three are regarded as primarily dependant on forest habitats. It is also expected that 54 species of amphibians occur within the supply area.

Many submissions were concerned that the proposal would significantly affect fauna in the SEPL supply area. A number of submissions also criticised the amount of detail presented in the draft EIS regarding fauna. In particular submissions were concerned that fauna lists presented in the draft EIS were incomplete or inaccurate. Concern was also raised that there had been inadequate discussion and listing of invertebrate populations in the supply area.

The proponent responded to concerns about the listing of species in the supply area in the supplement (p.35) by claiming that, given the size of the supply area, it is not reasonable to review all published research papers on species distribution. Information used came from a variety of sources including existing EISs, Fauna Impact Statements, State Forests of NSW management plans and general texts. Updated and amended species lists are included in the supplement in Appendix 4.

The EPA considers that the final EIS provides sufficient information regarding the distribution of fauna within the supply area given the extent of current knowledge. The EPA also considers that appropriate mechanisms exist to continue to identify and manage fauna within the supply area and that impacts on fauna can be minimised by compliance with the processes outlined in the final EIS.

With respect to invertebrate fauna, the proponent claimed in the supplement (p.38) that "the information available at present on the invertebrates of the native forests of Australia is totally inadequate to consider this group in any detail. Conservation of the native invertebrate fauna relies on the mosaic of reserved and of various management practices throughout the forests of Australia."

While information on the fauna present is quite incomplete, it is important that established mechanisms for the collection of such information be maintained or improved. Pre-logging surveys of fauna present in forests are an important source of knowledge, particularly in the lesser studied private property forests, and should be continued.

Recommendation 11: In accordance with the undertakings made by the proponent, fauna surveys should be undertaken in accordance with guidelines and by a scientist acceptable to the Australian Nature Conservation Agency before any harvesting of pulpwood for the production of woodchips for export is conducted. In regard to harvesting pulpwood for export obtained from silvicultural residues, there should be an agreement or understanding between the Australian Nature Conservation Agency and State Forests of New South Wales in regard to such surveys.

Endangered Species

A number of submissions claimed that the listing of rare and threatened plant species in the draft EIS was inadequate. The proponent responded to these concerns by providing an extended and more complete listing of the rare or threatened plant species known to occur in the State forests in the supply area. This listing included additional information provided by the Australian Nature Conservation Agency listing plant species listed under the Commonwealth *Endangered Species Protection Act 1992*.

The supplement (p. 32) noted that there are a seven endangered plant species known to occur within the supply area and another 22 endangered plants which may occur within the supply area. These figures include species found in rainforest areas which should not be affected by the proposal. Twenty seven plant species known to occur in the supply area are considered vulnerable. A further 67 vulnerable plant species potentially occur in the supply area. Endangered plant species are listed in Tables 4 and 5, Appendix 3, of the supplement.

The proponent argued that endangered and vulnerable flora in State forests would be protected under the State Forests Preferred Management Plan (PMP) System by which State Forest of NSW identifies and manages State forests to maintain diversity and special values. Areas containing rare or threatened species may be classified as preserved native forests, which would allow them to be assessed for dedication as Flora Reserves. The PMP System incorporates information on rare and threatened plants species from the State Forests of NSW EIS program and from additional research directed in EIS determinations.

The potential for the proposal to affect endangered fauna in State forests was raised in a number of submissions. The proponent noted (draft EIS p. 204) that the State Forests of NSW EIS program incorporates detailed impact mitigation measures which also apply to the proposal. In circumstances where logging activities may

take or kill endangered fauna, a licence is required from the Director of NSW NPWS and requires the preparation of a Fauna Impact Statement.

ANCA proposed that the State Forests of NSW EIS program is the most appropriate means for meeting Commonwealth objectives for endangered fauna under the *Endangered Species Protection Act (1992)* for public land. ANCA noted, however, that State Forests of NSW EISs need to cover all of the taxa groups, including fish, listed under the *Endangered Species Protection Act (1992)*.

The proponent (supplement p. 50) has undertaken to seek periodic discussions with State Forests of NSW to identify locations in which its suppliers of roundwood will be required to work in the next one or two years. NPWS and other State conservation agencies, State Forests of NSW, and ANCA will be consulted on the results of fauna and vegetation surveys undertaken by State Forests of NSW and on any action necessary to be taken, or being taken to meet the requirements of the *Endangered Species Protection Act (1992)*, *Endangered Fauna (Interim Protection) Act (1991)* or the *National Parks Wildlife Act (1974)*.

ANCA is of the view that the best way to satisfy Commonwealth obligations in relation to the *Endangered Species Protection Act (1992)* in the north east forests of NSW would be by the implementation of a comprehensive regional assessment and regional forest agreement processes under the National Forest Policy Statement.

ANCA, however, recognising that a regional forest agreement may not be in place for some years, suggested interim arrangements to satisfy the *Endangered Species Protection Act (1992)*. These measures include the continuation of the general woodchip licence condition that:

"The exporter shall ensure that any of its operations conducted in association with activities approved under this licence do not threaten with extinction, or significantly impede the recovery of, a native species or ecological community."

ANCA also advise that where flora and fauna listed under that *Endangered Species Protection Act (1992)* is involved timber harvesting could only proceed in accordance with an approved recovery plan.

It is also considered likely by ANCA that the environmental impact statements being prepared by State Forests of NSW are also an appropriate means of meeting Commonwealth objectives under the *Endangered Species Protection Act (1992)* for public land. There are a number of issues that need to be addressed if these EISs are to satisfy Commonwealth requirements. This would be achieved to a greater extent if:

- consultation with relevant Commonwealth agencies is undertaken during EIS preparation;
- the EISs cover all species listed under the *Endangered Species Protection Act (1992)*. There has been some recent indication that targeted surveys for rare or threatened species are a requirement in the most recent EIS determinations.

Recommendation 12: State Forests of New South Wales should be asked to take into account the species listed under the Commonwealth Endangered Species Protection Act 1992 when undertaking environmental impact assessments under the Timber Industry (Interim Protection) Act 1992.

Pre-harvesting surveys and acceleration of the State Forests of NSW EIS program to cover the SEPL supply area have been identified as two important means of extending the knowledge of flora and fauna and of endangered species in particular. The mosaic of information is unlikely to be complete, however, particularly for private property forests, until a comprehensive regional assessment is undertaken.

A comprehensive regional assessment undertaken on northern NSW forests should have as one of its major objectives the collection of sufficient information regarding endangered flora and fauna to allow appropriate conservation programs to be developed.

Recommendation 13: Where flora and fauna assessments identify the presence of endangered species listed under the Endangered Species Protection Act 1992, the Australian Nature Conservation Agency should be consulted about action necessary to comply with the requirements of the Act. Where assessments identify the presence of fauna listed under State endangered species legislation the relevant State agency should be consulted.

Retention of habitat trees

Silvicultural management includes the removal of misshapen or defective trees, referred to as "cull trees". These trees are felled to provide growing space for regeneration, often after sawlog harvesting. These trees are said to be additional to identified habitat tree requirements and are not acceptable as sawlogs.

The draft EIS (p.38) stated that this material is not actively sought by SEPL due to its lower likelihood of meeting woodchip specifications. In the absence of a market for this material, State Forests of NSW might still remove cull trees although the timber would be left on the forest floor to rot. This type of silviculture undertaken by State Forests of NSW is termed Timber Stand Improvement and constitutes only a small component of State Forests of NSW silvicultural works. The draft EIS noted that in 1989-90 the total State forest area culled without subsequent sale of timber was 17 hectares.

The proponent stated that cull trees are a relatively minor part of its woodchip source. The present annual yield of roundwood from this source is approximately 1500 to 2000 tonnes which includes 1000 to 1500 tonnes obtained from old-growth forest. It was acknowledged that the use of timber from cull trees would increase should SEPL increase the volume of chip exported to the maximum of 500,000 tonnes per annum. The anticipated maximum from this source would be 10,000 tonnes per annum. It is not clear what proportion of this would be produced from old-growth versus previously cut mature forests.

A number of submissions were concerned that the use of cull trees in the production of woodchips for export would result in significant impacts on old-growth forests where this style of silvicultural management is more common. Submissions pointed

out that older and defective trees often contained hollows and provided important habitat for forests fauna and that removal of these trees might lead to local extinctions and local population declines for many hollow dependant fauna. Submissions also claimed that the retention of replacement habitat trees by State Forest of NSW is not always adequately planned for in some State forest areas. ANCA expressed concern about this issue following field inspections by Commonwealth officers in the Wingham and Gloucester areas in November 1993.

The SEPL responded to these concerns in the supplement (pp.39-40) by noting that the protocols for the retention of hollow-bearing trees, and an adequate supply of mature trees to replace them, are the responsibility of State Forests of NSW and outside SEPL's control. It was also noted that the State Forests of NSW frequently retains considerably higher numbers of hollow-bearing trees than minimum numbers require. SEPL also noted that logging in oldgrowth would not be undertaken specifically to supply it with pulplogs and repeated earlier claims that, if this material was not be utilised for the production of woodchips, an economic resource would be burned or wasted.

The volume of roundwood obtained from culling operations in oldgrowth is small compared with the overall export volume available to SEPL. As much of the cull material could be unlikely to meet woodchip specifications required by SEPL (draft EIS p.27), the influence of woodchip exports on culling operations might be regarded as slight. Estimates of future production might suggest, however, as much as a five-fold increase in woodchips produced from cull trees. This is proportionally a far greater increase than for woodchip production generally.

The retention of adequate habitat trees is an important issue in forests generally and one which is affected by changes in the age structure of forests under logging and silvicultural management programs.

Recommendation 14: Trees within a forested area proposed for harvesting that have value as habitat for forest dependant species should be identified in pre-harvesting surveys and protected in accordance with a management plan acceptable to wildlife conservation authorities. In instances where endangered species listed under the Commonwealth Endangered Species Protection Act 1992 are likely to be found, the relevant authority is the Australian Nature Conservation Agency.

Soils

Soils in the supply area are described in appendix 11 of the draft EIS. Studies of soils undertaken by Veness and Associates within 600,000 hectares of State forests throughout the supply area were also described in the draft EIS. The studies concluded that all soils sampled proved to be stable but some of the soils had a low to moderate erosion potential depending on land management practices. There was a correlation between high dispersion values and low clay content. The representativeness of the data and studies is unknown.

Submissions were critical of the level of detail provided relating to soils and soil erosion and the reliance on information from State Forests of NSW environmental impact assessments. Additional compaction of the forest floor resulting from the proposal was raised as an issue in several submissions.

These issues were addressed to an extent in the draft EIS (p.126). SEPL acknowledged that, irrespective of the type of harvesting, a proportion of logged areas would be heavily compacted. The draft EIS claimed that the impact of obtaining pulpwood from the SEPL supply area was minimal as it would only be undertaken as an adjunct to sawlog harvesting operations and would make use of existing roads and log dumps. It was also claimed that compaction impacts are short term with natural regeneration occurring in compacted areas within a few years of forestry operations. This could be facilitated by mechanical ripping at the completion of operations.

SEPL argued that soil erosion would be controlled adequately because harvesting and clearing operations undertaken in State forests and on private property would be done in accordance with conditions arising from the State Forests of NSW EIS process and in accordance with existing State Forests of NSW prescriptions such as the Standard Erosion Mitigation Guidelines (SEMGLs). SEPL also reported that recent research has shown that integrated harvesting in the Eden Management Area has resulted in an average of only 14% soil disturbance within coupes with only about 3% of the total area considered significantly disturbed. These results relate to a different management area and their applicability to this proposal is uncertain. What these results do not indicate is the extent of the additional impacts that pulpwood harvesting and integrated silvicultural management would have over selective sawlog harvesting.

The EPA concluded that the additional impacts could be substantial in view of the far more extensive operation of mechanical equipment over the areas logged, particularly if appropriate environmental safeguards are not adopted. Existing State controls provide the best present available means for minimising soil disturbance. The impacts should be environmentally acceptable if harvesting is conducted in accordance with properly formulated plans and all State and local government requirements, particularly those relating to soil conservation.

Recommendation 15: Pulpwood harvesting and clearing operations conducted for the production of woodchips for export should be undertaken in accordance with State soil erosion control guidelines including Standard Erosion Mitigation Guidelines for Logging and Guidelines for Mitigation of Erosion and Land Degradation for Permanent Clearing on Protection Land.

Hydrology and aquatic environment

Most of the larger State forests in the supply area lie in the upper catchments of the Manning, Hastings and Karuah Rivers and in the catchments of the tributaries of the Macleay River and the Hunter River. Due to the variability between these system it is not possible to characterise them generally. Stream flow is considered highly variable; for example the Manning River has recorded ranges between 452 and 2870 megalitres per day at the Killiwarra gauging station.

Data cited in the draft EIS indicates that rainfall events can exceed 74mm in a one hour period and intense rainfall events of less duration but greater frequency have been recorded in the supply area. Rainfall erosivity, which is a measure of the ability of rain to cause erosion, has been assessed for all of NSW and is shown in figure 5.1

of the draft EIS. The northern part of the supply area is likely to be dominated by summer rainfall and a relatively mild climate. The southern part is characterised by a more uniform rainfall pattern with heavy rainfall likely to occur in any season.

Water quality of the rivers and tributaries of the supply area is summarised in the draft EIS as being of good quality in terms of high clarity (low turbidity) and low suspended sediment loads at low to average flows. Water quality of the major rivers is also described as good in terms of oxygenation and nutrient status. Water quality characteristics are described in further detail in appendix 10 of the draft EIS.

The principal aquatic fauna present in rivers within the supply area include fish and benthic macro-invertebrates. Water associated fauna including platypus, reptiles and amphibians are also present in the supply area. Upland streams exhibit greater structural diversity than lowland or coastal habitats with the beds of uplands streams comprising of cobble, gravel and sand resulting from degrading substratum. These generally provide a larger number of micro-habitats than sand and mud beds of coastal streams.

While no comprehensive fish surveys have been carried in the supply area, one fresh water cod species is listed as endangered in the Clarence and Richmond river systems to the north of the supply area.

Appraisal of existing aquatic ecosystems was undertaken by a literature review and by reference to previous studies in the Grafton and Casino areas.

Several public submissions claimed that the draft EIS underestimated the effects of pulpwood harvesting on hydrology. Particular concerns related to water yields, stream sedimentation, and the predicted effects of fire and roading on water quality in streams and major rivers of the region.

SEPL responded to these claims in the supplement (p. 26) by noting that the results of studies undertaken elsewhere are not relevant to the proposal due to differences in scales and intensities of forestry operations. SEPL quoted recent State Forests of NSW research which found that when crown removal is less than 20%, impacts on water yield are generally not detectable from natural background fluctuations.

SEPL acknowledged that there are likely to be adverse effects associated with logging and roading on forest ecological values but argued that these effects would be more pronounced within areas of active harvesting and road construction. Most impacts would be highly localised and of a short term nature due to the generally limited amount of canopy cover removed in thinning operations and their wide distribution in space and time.

The Department of Water Resources noted in its submission that it has powers under the *River and Foreshores Improvements Act 1948* to control any activity that has the potential to disturb the stream bank or flood plain generally within 40m of the top of the bank and is also able to control activities that are likely to be detrimental to the stability of a river or stream that is outside the 40 m limit. This may extend to soil erosion control on land adjacent to a river that is subject to harvesting as part of the SEPL proposal.

The EPA concluded that in State forests, the impacts of silvicultural management would be incremental above the impacts caused by logging. The various regulations that apply to State forests of NSW operations should minimise impacts on streams and water quality.

There should also be adequate legislation to control the impacts of private property forestry and clearing operations on streams and water quality although in this instance, the general lack of supervision of the operations could work against best practices being followed.

It has not been possible to reach a definitive conclusion on the extent to which operations would effect water yield. In State forests, one would expect that the incremental effect of silvicultural management would be small. In private property operations, because activities involving pulpwood harvesting are likely to be individually limited in scale and scattered geographically, impacts should generally be localised.

Recommendation 16: Pulpwood harvesting plans for individual private properties should identify action being taken to protect streams and water quality.

Concern was raised in submissions that logging and clearing operations would result in increased stream sedimentation and loss of riparian vegetation in the supply area. A number of submissions also criticised the quality of aquatic ecosystem studies, particularly the extent and methodology of sampling. Concern was expressed about conducting macroinvertebrates studies rather than fish studies and that studies were limited in coverage considering the overall size of the SEPL supply area.

Aquatic ecosystems including aquatic macro-invertebrates, water associated species of mammals and reptiles, fish and amphibians are described in Section 5 of both the draft EIS and the supplement.

The EPA considers that the general level detail provided in the Final EIS on species distribution and abundance limits assessment of the potential impact of the proposal on aquatic ecosystem. This could be in part a function of the limited information available about the natural values of the SEPL supply area. The identification and conservation of significant aquatic ecosystems should be undertaken as part of the State Forests of NSW EIS program for state forests and be addressed on a site by site basis as part of the approval process for private property operations. It is important, therefore that the State Forests of NSW EIS program cover the SEPL supply area as soon as possible. A comprehensive regional assessment would cover both forest tenures

The use of existing soil erosion controls and practices such as:

- the SEMGL;
- the retention of vegetation as filter strips and in riparian areas in accordance with soil erosion and habitat maintenance guidelines;
- additional conditions arising from State Forests of NSW EIS determinations regarding rare or endangered aquatic species; and

- conditions attached to private property export licence approvals should assist in the protection of aquatic ecosystems.

Recommendation 17: Logging plans involving the harvest of pulpwood for export should require the preservation of adequate vegetation to protect stream water quality and habitat particularly in riparian areas.

IMPACTS SPECIFIC TO SILVICULTURAL RESIDUE OPERATIONS

Silvicultural management of Crown forests in NSW is conducted by State Forests of NSW staff or contractors supervised by State foresters. The purchase by SEPL of woodchips produced from silvicultural residues is, therefore, directly connected to State Forests silvicultural programs and operations. State Forests of NSW also conducts research into silvicultural management of native forests.

Silvicultural thinning

The term "silviculture" refers to any practice associated with the cultivation of forests and includes the removal of timber from a forest to enhance growth of the forest overall.

Under silvicultural practices a proportion of trees within a stand might be removed to reduce competition between adjacent trees. The draft EIS noted (p. 35) that the number removed and the spacing between retained trees are prescribed by thinning guidelines developed as a result of State Forests of NSW research. Research has also indicated that thinning can provide a 20% to 25% increase in forest productivity.

A proportion of the volume of timber growing in unthinned stands can be lost through trees dying due to competition from other trees. This is competition-induced natural thinning of the stand. Planned thinning can utilise excess growth in a forest before it is lost, providing an immediate yield from the forest. It can also allow the removal of non-commercial stems, redistribute growth and shorten rotation length.

The draft EIS noted that the sale of pulpwood makes thinning operations viable and can account for up to 80% of produce from early plantation thinning (15-20 years). Thinning operations for minor forest products such as poles were said to have negligible silvicultural benefits (draft EIS p.38).

State forest operations

The *Forestry Act 1916* defines the powers, duties and objectives of the Forestry Commission of NSW. A description of these can be found in section 2.6.2 of the draft EIS. State Forests of NSW is the registered business name of the Forestry Commission of NSW. State Forest of NSW planning processes and forest policies are developed to meet its obligations through the management of State forest timber reserves and other Crown timber lands. Planning is based on a hierarchical system with adherence to the State Forests of NSW indigenous forest policy defining the

objectives of forest management on a State wide basis. This policy is described in the draft EIS (p.39).

The forest estate, except for exotic pine plantations, is divided into management areas each with its own administration. The objectives of management plans which have been developed for the various management areas encompassing all State forest, Timber Reserves and other Crown timberland are described in the draft EIS (p.39). Preferred Management Priority Plans (PMP) deal with special emphasis areas and are the principal mechanism by which State Forests of NSW identifies and manages State forests to maintain diversity and special values. This system is shown schematically in figure 3.7 of the draft EIS.

Applicable State Legislation

There are a number of existing controls on the operations of State Forests of NSW and on activities within State forests. These controls include *The Forestry Act 1916*, the *Environmental Planning and Assessment Act 1979*, the *Endangered Fauna (Interim Protection) Act 1991*, the *National Parks and Wildlife Act 1974*, the *Timber Industry (Interim Protection) Act 1992*, the *Heritage Act 1977*, the *Water Act 1912*, the *River and Foreshores Improvements Act 1948* and the *Environmental Offences and Penalties Act 1989*.

There are a number of specific pollution control Acts which are also relevant to the proposal. These include the *Clean Air Act 1961*, the *Clean Water Act 1970*, the *Pollution Control Act 1970*, and the *Noise Control Act 1975*.

A summary of applicable State legislation can be found in section 2.6.2 of the draft EIS and within relevant sections in the supplement.

Other controls and codes of practice on State forestry operations

A number of non-legislative measures exist to control the environmental impact of forestry operations in NSW State forests. These are described in section 9 of the draft EIS and summarised below.

Timber production is the primary objective of State Forests of NSW although the *Forestry Act (1916)* requires State forests to be managed for a variety of purposes including the preservation of flora and fauna, the protection of soils, water catchment capabilities and recreational values. The primary safeguard for mitigation of environmental impacts is the State Forests of NSW planning system which is designed to identify appropriate uses for each forest area and to identify environmentally sensitive areas. Planning ranges from strategic broad scale planning to detailed site specific harvesting plans to ensure that all uses, including wood and non-wood outputs, are environmentally sustainable.

At the operational level a number of measures are used to minimise impacts. These measures are incorporated into harvesting plans which outline information regarding erosion risk and methods for erosion mitigation, habitat reservation, road and log dump standards and filter strip requirements.

Pre-harvest tree marking is undertaken by State Forest of NSW to identify trees to be retained for future growth and wildlife habitat. Tree marking is also used to identify riparian and other environmentally sensitive areas within the area to be harvested. Logging operators are trained in the use of logging equipment and supervisors are also trained to identify features such as wildlife habitat trees. Research is conducted into processes such as hydrology, nutrient cycling, habitat modification and fire. A number of monitoring programs are currently being developed which are intended to ensure that State Forests of NSW and contractors are operating in State forests in an environmentally acceptable manner.

Standard Erosion Mitigation Guidelines for Logging in NSW (SEMGL) are being developed continually by the NSW Soil Conservation Service and State Forests of NSW to mitigate soil erosion associated with timber harvesting. Current measures under these guidelines are applied routinely during harvesting operations.

State Forests of NSW has also developed codes of practice for all harvesting under its control. Compliance with these codes is mandatory under licences that are required before sawmillers, contractors or forest workers can operate in State forests. State Forests of NSW monitors harvesting operations to ensure compliance with harvesting plans, codes of practice and the SEMGL's. Non-compliance can be penalised under the terms and conditions of licences issued to operators, contractors and sawmills.

Links between woodchip exports and silvicultural management

SEPL's woodchip export operations based on silvicultural thinning are primarily dependant on State Forest of NSW control and management of forests. Those trees identified for thinning or culling are cut and transported to chippers and chipped by various contractors before SEPL purchases the chips for export.

Many submissions claimed that the ability to sell timber from thinning including cull trees, enabled these operations to be undertaken over a greater area resulting in environmental impacts additional to those that would be caused by standard harvesting and silvicultural management practices. The additional income from pulpwood sales could also lead State Forests of NSW to harvest coupes considered uneconomic to harvest for their sawlog content alone. Anecdotal evidence was also presented in submissions suggesting that silvicultural practices in north coast forests have altered since the development of woodchip markets.

This issue was not discussed in the final EIS other than in general discussion of additional impacts due to the proposal. Section 2.2 of the supplement noted that the silvicultural specifications for both thinning and integrated sawlog operations are set by State Forests of NSW and carried out under the supervision of its staff. SEPL argued that it has little direct involvement in forestry operations and claimed that its export operations have very little impact on forest management.

If this was so, it could be argued that the use of silvicultural residues for the production of woodchips was beyond the scope of this EIS. This argument is not accepted by the EPA because, among other things, the income derived from the sale of woodchips clearly supports silvicultural thinning that would otherwise not be done. The question remains, however, about the extent to which the financial

returns from woodchip sales influence the extent of silvicultural management operations. In other words, to what extent are silvicultural management operations driven by woodchip exports?

The evidence is that the influence is considerable. For example:

- the draft EIS (p.38) acknowledges that, "without pulpwood sales, the thinning logging operation would not be viable, with only 20% of the output being sold as other products such as small sawlogs and poles." and;
- the draft EIS (p.33) acknowledges that, "the intensity of thinning has been variable as it depended on the degree to which the products yielded were marketable."

From the information available, it is difficult to determine whether silvicultural practices are benefiting the forest or the extent to which more active silvicultural management supported by income from wood chipping is affecting the non-wood values of forests.

On balance, it is the EPA's view that silvicultural management of forests by State Forests of NSW within the supply area is pulpwood driven and that some existing management practices would not be carried out in the absence of a pulpwood market. Some aspects of the silvicultural management of forests by State Forests of NSW are possibly not best practice and could be leading to a degradation of the forest estate and loss of habitat for forest dwelling species, both plant and animal. The EPA, however, supports the use of timber from standard thinning and culling operations and considers the export of this material as preferable to wasting the resource particularly through burning it.

Recommendation 18: Studies should be undertaken to determine to what extent silvicultural management practices in New South Wales have changed or are being influenced by the existence of markets for woodchip. The results of these studies should be made public.

IMPACTS SPECIFIC TO PRIVATE PROPERTY OPERATIONS

SEPL's export operations based on the purchase of woodchips produced from private property forestry and clearing are little different from its silvicultural operations. The management of the resource and selection of material, however, is quite different. Private property forestry is often opportunistic and is driven by a variety of incentives for private property owners. This can include land clearing for agricultural pursuits, short term cash to support other farming operations or a longer term income for often absentee forest owners. It is driven, or can be driven, both by sawlog demand and woodchip demand. The former could become increasingly significant if sawlog demand remains constant or grows, and State Forests of NSW continues to reduce quotas of sawlogs available from State forests. This could change the focus of pressures on the resource and the native forest environment from state forests to privately owned forests. Little, if any, strategic management of the private property forest estate is undertaken.

Although there is an extensive array of legislation in NSW that can apply to private property forestry and land clearing, there are significant gaps in the effectiveness of controls. Those controls that exist appear, through anecdotal evidence provided in submissions on the draft EIS, often not to be policed effectively.

There appears to be a very limited planning framework and limited information available about the nature of the private forest estate or the habitat and species it supports. Impacts resulting from the incremental and cumulative clearing of private forests in northern NSW is a matter of considerable concern.

In the supplement the proponent noted that the National Forest Policy Statement (p.27) acknowledges that private forest owners may wish to clear native forest for a range of economic uses. The NFPS however qualifies this acknowledgment by stating that Governments "agree that land clearing can be permitted provided it complies with State and regional conservation and catchment management objectives, relevant planning schemes and legislation" (NFPS p27). As discussed above it would appear that there are instances in Northern NSW where land clearing can be undertaken without any requirement to obtain approval and without reference to regional planning, conservation or catchment management objectives.

SEPL's purchases of woodchips from private property resources in recent years, (10,000 tonnes per annum in 1991) have been relatively small although its licence does allow up to 70,000 tonnes per annum. Various circumstances such as an increased demand for woodchips, a reduction in the availability of chips from other sources or a need to improve the overall chip quality could influence SEPL to expand this sector of its operation up to the maximum.

Nature of the private forests estate

The four forest regions of northern NSW contain in the vicinity of 2.2 million hectares of timbered private property (Table 3.5 of the Draft EIS). Beyond that, the draft EIS (p.47) acknowledges that there is a general lack of information available that describes the area or characteristics of private property forests on the northern and central coast areas of NSW.

Private property forests in these areas were estimated to be able to sustain a potential annual yield of 900,000 tonnes of pulpwood and sawlogs by the NSW Pulp and Paper Task Force (1991). Although this figure assumed that 50% of the 2.2 million hectares of private forest would be available for harvest and is based on a larger area than the SEPL supply zone, it is indicative of the volumes potentially available from this resource.

The draft EIS claimed that past use of private forests parallels that of State forests with many private property forests existing as remnants from earlier clearing. It is claimed that almost all forests have been heavily cut-over for sawlogs, poles, piles and sleepers. It is also noted that historic clearing operations were selective and rarely involved any silvicultural management. Many of these forests are thought to have a multiple age class structure and contain few sawlogs. Private property forests also include even-aged regrowth forests which have re-established on formerly cleared lands.

Private property operations are currently proposed in the shires of Great Lakes, Dungog, Gloucester, Walcha, Hastings and City of Greater Taree Councils although operations outside this area may be considered where economic.

Control of Private Property forestry operations

Legislative controls over private property are similar to those described above for State forests and in section 2.6.2 of the draft EIS with the exception of controls under the *Forestry Act 1916* which do not apply to private property.

In addition, paragraph 12 of the *Timber Industry (Interim Protection) Act 1992* enables regulations to authorise logging operations on certain private lands without prior environmental assessment by suspending certain provisions under Part 5 of the *Environmental Planning and Assessment Act 1979* and orders under section 92E of the *National Parks and Wildlife Act 1974* as modified by the *Endangered Fauna (Interim Protection) Act 1991*. The Act also allows for regulations to be made over specific private property areas to provide protection for the employment of workers engaged in logging operations and in the wider timber industry. Logging operations are "conducted in a manner which mitigates their environmental impacts to the greatest practicable extent." Conducting operations under these provisions, however, does not preclude the possibility of significant environmental impacts or degradation of conservation values.

Private landholders are required to obtain a licence under Section 120 of the *National Parks and Wildlife Act 1974* to take or kill endangered fauna. This applies if a proposed activity is likely to have a significant impact on the habitat of protected or endangered fauna. Significant penalties apply under Sections 98 and 99 of the Act for failing to obtain licences.

Section 117 of *National Parks and Wildlife Act 1974* also prohibits the picking of a protected native plant without obtaining a licence under Sect 131 of the Act.

In some land council areas, activities including private property forestry or clearing may require approval from local councils under Local Environment Plans which are prepared by Councils under Part 4 of the *Environment Planning and Assessment Act 1979*. Where logging activities are prescribed under a Local Environment Plans, development consent is required prior to the commencement of work. If, in the opinion of the determining authority, logging will have a significant impact on the environment an EIS may be required to accompany the development application. Table 2.2 of the draft EIS lists Councils in the supply area which require development approval for logging activities. Approximately 40% of councils require development approval for logging rural lands while only 33% of councils require development approval for clearing rural lands.

Under Part 5 of the *Environment Planning and Assessment Act 1979* a consent authority, usually a State government agency, is required to consider the environmental significance of a proposal requiring any form of approval. For example, where a landowner is required to obtain approval under the protected lands provisions of the *Soil Conservation Act 1938*, the Commissioner for Soil Conservation is required to consider, in accordance with Part 5 of the *Environment Planning and Assessment Act 1979*, all environmental aspects of the proposal. Again

where it is considered that significant environmental impacts may result from a proposal if approved, an environmental impact statement may be required to accompany an application for approval.

An informal process, often described as a review of environmental factors, may be undertaken to assist a government consent authority determine the environmental significance of a proposal. A review of environmental factors is generally less detailed than an EIS and has no formal requirements for either content or public review. An EIS can, however, be directed as a result of an REF. Conditions to mitigate environmental effects may be attached to any consent resulting from the content of an REF. This process may be used by both local and State government authorities for considering environmental impacts associated with SEPL's operations.

In addition to legislative controls, Allan Taylor and Co, SEPL's main supplier of woodchips, claims that it specifies that the same standards of operations on private property as are used in State forests. This includes the application of Standard Erosion Mitigation Guidelines for Logging (SEMGL) developed by the Department of Conservation and Land Management and State Forests of NSW. (draft EIS p. 194)

There are instances in NSW where logging and clearing operations on private property are probably not subject to any form of approval or independent control or scrutiny. It has not been possible to estimate the extent of this gap in controls. It is likely that significant environmental impacts are occurring, particularly on endangered species whose location and status are often poorly known, a conclusion supported by evidence in submissions. Similarly, it has not been possible to ascertain the extent of this problem.

The NSW Department of Conservation and Land Management (CALM) submission noted that soil erosion controls designed for Crown lands do not automatically apply to private land. CALM also noted that erosion control guidelines such as the (SEMGL) and Guidelines for Mitigation of Erosion and Land Degradation for Permanent Clearing on Protected Land are generic guidelines and need to be specifically adapted to suit each harvesting site.

CALM suggested that the erosion hazard and sediment control strategy contained in conditions 40 and 41 of the NSW Minister for Planning determination for the Wingham Management Area could be applied to logging on private land. Adoption of these conditions would require SEPL, in consultation with CALM, to have specific harvesting plans prepared for each private property to prevent or minimise soil erosion and soil compaction impacts associated with the proposal. This approach is supported by the EPA. Each plan should incorporate an erosion hazard, sedimentation and drainage control strategy and, where appropriate, make provision for road location, design and construction, snig track routes, log dump locations and ground cover management.

Recommendation 19: Logging on private property should be carried out in accordance with a harvesting plan produced by the proponent which takes into account State soil conservation guidelines.

Where the export of woodchips from private property is approved on a property by property basis by the Commonwealth, there may be a lack of proper control or

monitoring of cumulative impacts where decisions are made in isolation of State planning processes such as those under the *Environment Planning and Assessment Act 1979*. Significant gaps in the knowledge of private forest values in the SEPL supply area must result in the devaluation of forest values where proposal are approved in the absence of local, regional or national perspectives.

Where a private property forestry or clearing proposal is subject to control under the *Environment Planning and Assessment Act 1979* the EPA considers that adequate controls exist to identify potential impacts. Assessment of cumulative or incremental impacts can be undertaken under the *Environment Planning and Assessment Act 1979*.

SEPL's Private property planning and approval process

SEPL's policy is to purchase woodchips sourced from forested land that is held under freehold title and from both sawlog harvesting operations as well as clearing operations. Allen Taylor and Company (AT & Co), SEPL's principle chip supplier, has the most formalised planning process for private property operations of all SEPL's suppliers. AT & Co also has a policy only to salvage pulpwood from clearing operations where the land owner makes a commitment to establish pasture or an agroforestry project in cleared areas. SEPL now claims that it requires a similar level of planning for all operations supplying chips sourced from private property roundwood (draft EIS p.53).

The draft EIS stated that AT & Co, and therefore SEPL, can be very selective in their choice of private property due to the abundance of private property timber available. The company does not seek private property timber but rather relies on property owners to offer timber to them.

The process of identifying suitable properties and undertaking pre-harvest planning is described in detail in section 3.4.4 of the draft EIS and section 5.7.4 of the supplement. This process provides, among other things, specific information including a description of the forest to be cleared, proposed silvicultural and land use treatments during and following harvesting, details of archaeological and flora and fauna values, visual impacts, protected land status, local government controls, details of harvesting areas and any logging exclusions that apply. In addition, basic environmental impact assessment is undertaken by the company which includes a fauna assessment of the subject property. This information is then referred to the NSW National Parks and Wildlife Service who may modify the proposal if required to protect endangered species.

The proposal, together with relevant information and approvals is referred to the Department of Primary Industries and Energy (DPIE) for export approval. DPIE may seek comment on the proposal from the Department of the Environment, Sport and Territories prior to granting approval for proposed operations. Under export licence conditions, since October 1993, this advice has been provided by ANCA. This process is summarised in the supplement (p.54) and a summary of commitments regarding environmental impact assessment made by SEPL appears on page 55 of the supplement.

SEPL has also undertaken to develop a manual to assist consultants and field staff identify species listed under the Commonwealth Endangered Species Protection Act

1992) (Draft EIS P. 52). Development of this manual is supported by the providing it is produced in consultation with relevant expert bodies such as ANCA and is not used to substitute for expert flora and fauna assessment.

Submissions criticised the form and extent of environmental information which SEPL is required to provide to DPIE in regard to approval to exports woodchips from individual properties. This criticism is considered valid.

The proponent discussed cumulative impacts in the supplement (p.54) and suggested that cumulative impacts would be minor due to the limited area of private forests involved annually. The supplement, however, acknowledged that "if each property being cleared happened to contain sensitive habitat or species, the cumulative effects could be significant."

If the procedures described above are followed rigorously, they should provide for an adequate level of assessment of the potential impacts of operations on individual properties and for suitable environmental safeguards to be applied. There is some evidence in submissions that procedures might not always be followed rigorously, particularly by smaller individual operators. SEPL should guard against this occurring or potentially risk its licence conditions being breached. DPIE investigates alleged breaches of export licence conditions when such breaches are brought to notice.

There are two other shortcomings in the SEPL process. First, basic information on forest values is commonly not available as a starting point for an assessment or a framework against which to judge impacts or the efficacy of the process.

It has been stated in several instances in this report that information on forest values in the supply area is limited, and particularly so in the case of private forests. A comprehensive regional assessment is a longer term solution to fill the gaps. In the short term the flora and fauna surveys recommended earlier in this report would be of significant benefit. There is evidence that such work is already done prior to logging, although the range of studies could be improved. Consideration of private property applications by DPIE provides a basis for requiring and improving on pre-logging surveys.

Recommendation 20: Applications to the Department of Primary Industries and Energy for approval to export woodchips produced from private properties should include information on the environmental values and the potential impacts of pulpwood harvesting on those properties. Commonwealth environmental protection agencies should be consulted on the nature and extent of information that should be sought.

Second, the process gives little opportunity to assess the cumulative impacts of private property forestry or clearing operations. State and local government planning processes are important here. To ensure that the regional and cumulative impacts of private property proposals are given an opportunity to be considered, private property proposals should be subject to some form of overview, preferably in accordance with the NSW or local government statutes.

The NSW Government should consider establishing specific strategies to ensure that regional conservation, catchment management and other objectives consistent with

ecologically sustainable management are met with respect to private property forestry and clearing in the SEPL supply area. This may involve controls over land clearing, land use covenants between landowners and the NSW Government or other mechanisms to encourage retention of native vegetation. There are powers under the NSW *Environmental Planning and Assessment Act 1979* that could be used to achieve this objective.

In situations where neither council approval nor approval from a State agency (eg NPWS, Soil Conservation Service) is required, there is currently no opportunity for impacts other than those which are site specific to be considered. Therefore, there are grounds to exclude from export, woodchips obtained from properties in areas where, because of the lack of controls, it is not possible to determine adequately the full extent of environmental impacts, including regional or cumulative impacts.

Recommendation 21: The Minister for Resources should consider, as an export licence condition, the exclusion from export of woodchips obtained from properties in areas where, because of the lack of adequate controls, it is not possible to determine adequately the full extent of environmental impacts, including regional or cumulative impacts.

Voluntary codes of practice

A voluntary code of practice for forestry on private land, the *Private Property Logging Protocol for NSW*, is being developed by the NSW Forest Products Association. This should be a potentially useful means for guiding harvesting and clearing operations on private property once it is finalised and accepted by relevant resource and environmental management agencies.

If the protocol could be prepared in a fashion that would allow it to be given some form of compulsory status within a framework of regulation, it could have significant influence in controlling private property forestry operations. A document of this nature could also be useful in providing regional and cumulative perspectives of private property forestry which, in turn, could assist in managing broad scale and cumulative impacts. To be fully effective, the document should be of a standard which satisfies relevant State and Commonwealth resource and environmental management agencies including the Australian Nature Conservation Agency.

It is the EPA's understanding that the development of this protocol has been suspended due to other funding priorities by the NSW Forest Products Association. The Department of Primary Industries and Energy should pursue the development of the *Private Property Logging Protocol for New South Wales* with the New South Wales Forest Products Association.

Recommendation 22: A code of practice for forestry and clearing operations on private property incorporating acceptable environmental protection practices should be prepared and, to the extent that is practicable, enforced. Compliance with such a code of practice should be a condition of export approval for woodchips produced from private property forestry and clearing operations.

This is in accordance with undertakings made in part 4.4 of the National Forest Policy Statement.

Economic incentives

A number of submissions were concerned that the existence of a woodchip market would provide an incentive to clear private property for short term economic gain.

The draft EIS (p.53) acknowledges that income from the sale of pulpwood can be important to landholders as a supplement to farm income and that the market for pulpwood can increase returns for landholders who undertake joint sawlog and pulpwood operations which can make otherwise uneconomic sawlog harvesting feasible.

The draft EIS however states that there is likely to be a significant gap of least several hundred dollars per hectare between the returns that the landholder obtains from the sale of timber and the cost of effectively establishing new pasture. Estimates in the draft EIS (p.53) gave indicative costs for the establishment of pasture following clearing. There is also no detailed break up costs for pasture improvement after clearing. The bulk of costs are seemingly derived from notional labour costs which do not always require the outlay of money by a landowner. The ability to enhance property values through land clearing is also discussed in the supplement (p.64).

The supplement also claims that clearing and logging operations would proceed in the absence of a woodchip market and that it is appropriate that property owners are able to salvage and market useable resources from these operations.

It was mentioned earlier in this report that SEPL's principal woodchip supplier has a policy only to salvage pulpwood from clearing operations where the land owner makes a commitment to establish pasture or an agroforestry project in cleared areas. There is, however, no existing mechanism available to guarantee the future use of private property and it is possible that a landowner may undertake no further works after clearing or harvesting.

The EPA has concluded that the sale of woodchips does provide incentives for additional clearing of private property. As a result of such incentives, it is possible that land might be cleared that otherwise would not be cleared because it could be marginal or unsuitable for agricultural or pastoral activities. There are many examples throughout Australia where land has been cleared unwisely leaving a legacy of erosion and weed problems. Although it might not be possible to stop unwise land clearing occurring, this type of activity should not be encouraged by a Commonwealth action, and should be actively discouraged where possible.

Recommendation 23: Statements by property owners on the future use of private forest land from which woodchips for export are being produced should be provided with each application made to the Minister for Resources or the Minister's Department.

CONCLUSION

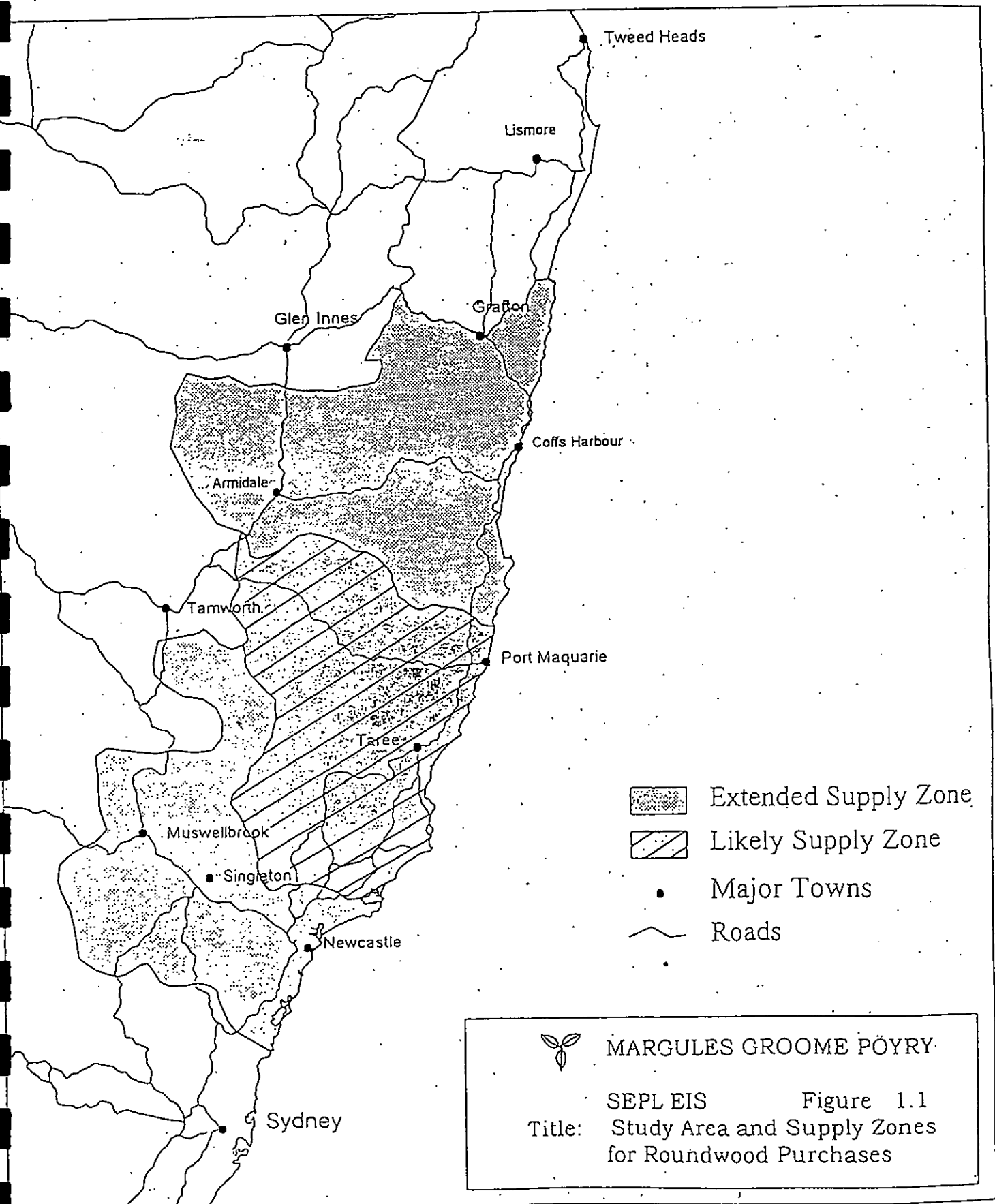
The EPA considers that provided that the recommendations related to the issue of a woodchip export licence to SEPL are implemented and there is proper compliance with all relevant State and local government regulatory requirements, the overall impacts of the production of woodchips from silvicultural residues from State forests

and from forestry and clearing operations on private land can be considered acceptable. On environmental grounds, there is no reason why an export licence issued to SEPL should not allow export of woodchips from the designated sources within the current 500,000 tonne per annum limit. Recognising that there are issues relating, in particular, to improving the knowledge of forests in the region, the report makes a number of recommendations that are matters for Commonwealth and New South Wales Government consideration.

ATTACHMENT 1

Woodchip supply area

STUDY AREA



ATTACHMENT 2

Definition of woodchip sources

DEFINITION OF WOODCHIP SOURCES

The various sources of wood used to produce woodchips are as follows:

Sawmill Wastes: Wood that remains from sawlogs after sawn timber has been produced. This may include wood from slabs, offcuts, dockings, edging's and other solid residues from sawlogs.

Logging Residues: Trees felled to yield sawlogs also contain other components that are unsuitable for the production of sawn timber. This may include sections from the base of the tree, the crown and from malformed or decayed sections. Logs felled for sawlogs but found to be unsuitable for the production of sawn timber are also included in this category.

Silvicultural Residues: This category includes logs felled as part of thinning operations in regrowth forests or in plantations and which have no other commercial application. This category also includes trees felled for silvicultural treatments subsequent to normal sawlog removal. This category also includes "cull trees" which are removed for silvicultural reasons but not necessarily in conjunction with thinning or sawlog harvesting. In addition, trees felled as part of road clearing and trees salvaged following natural disasters are also included in this category

Roundwood This term is used to describe wood in the form of whole or part logs that are processed into chips without the removal of sawn timber. This term can refer to timber derived from both State forests and private property operations.

ATTACHMENT 3

SEPL woodchip export licence

ATTACHMENT 3

Licence Number: **MEPWOOD 997****LICENCE TO EXPORT UNPROCESSED WOOD****(COMMONWEALTH EXPORT CONTROL ACT 1982)**

I, **DAVID BEDDALL**, Minister for Resources, acting pursuant to Regulation 8 of the *Export Control (Unprocessed Wood) Regulations*,

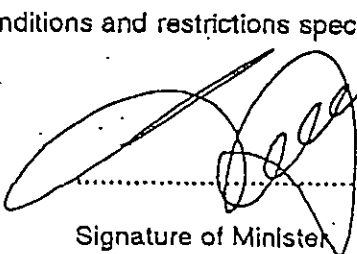
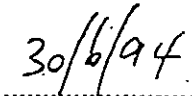
hereby grant

SAWMILLERS EXPORTS PTY LTD

a licence to export

HARDWOOD WOODCHIPSduring the period commencing on: **1 JULY 1994**and ending on **30 SEPTEMBER 1994**

Pursuant to Regulation 9 of the *Export Control (Unprocessed Wood) Regulations*, this licence is subject to the conditions and restrictions specified below.


Signature of Minister
Date**DEFINITIONS**

1. In this licence -

"sawmill residues" means waste material resulting from sawn timber production, consisting of slabs, offcuts, dockings and boxed hearts rejected in normal sawmilling operations;

"logging residues" means the heads, limbs and butts of trees felled for sawlogs and trees felled for sawlogs but found to be faulty;

"silvicultural residues" means material resulting from thinning of regrowth forest and plantations, (provided that the land from which the residues are obtained is being maintained predominantly under tree cover), tree clearing for road making, and salvage logging following natural disasters;

"the exporter" means Sawmillers Exports Pty Ltd, the registered office of which is at Lot 3 Heron Road, Kooragang Island, NSW, 2304, or any other person or company acting by, or on behalf of, or under the authority of, Sawmillers Exports Pty Ltd;

"the Department" means the Commonwealth Department of Primary Industries and Energy;

"the Minister" means the Commonwealth Minister for Resources.

PRICING

2. (a) The exporter shall not export woodchips under this licence except for the purpose of fulfilling a contract of sale in relation to those woodchips between the exporter and an overseas buyer, being a contract that has been approved by the Department.
- (b) Before commencing pricing negotiations for spot sales or pursuant to the terms of an approved contract with the overseas buyer under that contract, the exporter shall provide to the Department, on a commercial in confidence basis, particulars of the price or prices sought by the exporter and of the basis on which it has calculated that price or those prices.
- (c) Where, following pricing negotiations for spot sales or pursuant to the terms of an approved contract, a price or prices is or are agreed between the exporter and the overseas buyer, the exporter shall not export woodchips sold to that buyer for that price or those prices unless approval by the Minister or the Department of that price or those prices has been documented.
- (d) The exporter shall not export woodchips pursuant to the terms of an approved contract in the absence of an agreed price or prices unless approval by the Minister or the Department of interim or provisional prices has been documented and the Department has agreed to arrangements concerning the retrospective application of an agreed price or prices to be negotiated by the exporter subsequent to approval by the Minister or the Department of the interim or provisional prices.

EXPORT LIMITATIONS

3. (a) The exporter shall not export woodchips under this licence from any place other than the port of Newcastle in the State of New South Wales without the prior approval of the Minister.
- (b) The total volume of woodchips exported under this licence shall not exceed 125,000 tonnes.

SOURCE MATERIAL

4. Source material for the production of woodchips for export under this licence shall be limited to logging residues, silvicultural residues, sawmill residues and roundwood.
5. Logging residues and silvicultural residues shall be utilised for the production of woodchips for export under this licence only when supplies of sawmill residues available to the exporter are being utilised to the fullest extent possible, and shall be derived from routine management operations in New South Wales Crown forests specified by State Forests of New South Wales.

- 3 -

6. The exporter shall not carry out logging of pulpwood intended for export as woodchips in, or export woodchips produced from logs removed from, an area which has been entered on the Register of the National Estate or placed on the Interim List of the Register of the National Estate unless the exporter has received prior written notice from the Minister or the Department that logging may take place in that particular area, or the Minister or the Department has given approval in writing for the export of such material.
7. Roundwood for the production of woodchips for export under this licence shall be obtained only from private land in New South Wales under terms and conditions agreed between the exporter and the Department.

ENVIRONMENT PROTECTION

8. The exporter shall ensure that all operations to obtain logging wastes and silvicultural residues for the production of woodchips for export under this licence are carried out as directed by State Forests of New South Wales.
9. The exporter shall ensure that logging operations for the purpose of export woodchips in NSW Crown forests in respect of silvicultural thinnings must only occur in accordance with advice from the Australian Nature Conservation Agency concerning endangered species listed on the Schedules of the *Endangered Species Protection Act 1992*.
10. The exporter shall ensure that logging operations on private property for the purpose of export woodchips must not occur until a survey of species has been completed to the satisfaction of the Australian Nature Conservation Agency.
11. The exporter shall ensure that any of its operations conducted in association with activities approved under this licence do not threaten with extinction, or significantly impede the recovery of, a native species or ecological community listed on the Schedules of the *Endangered Species Protection Act 1992*.

INSPECTION

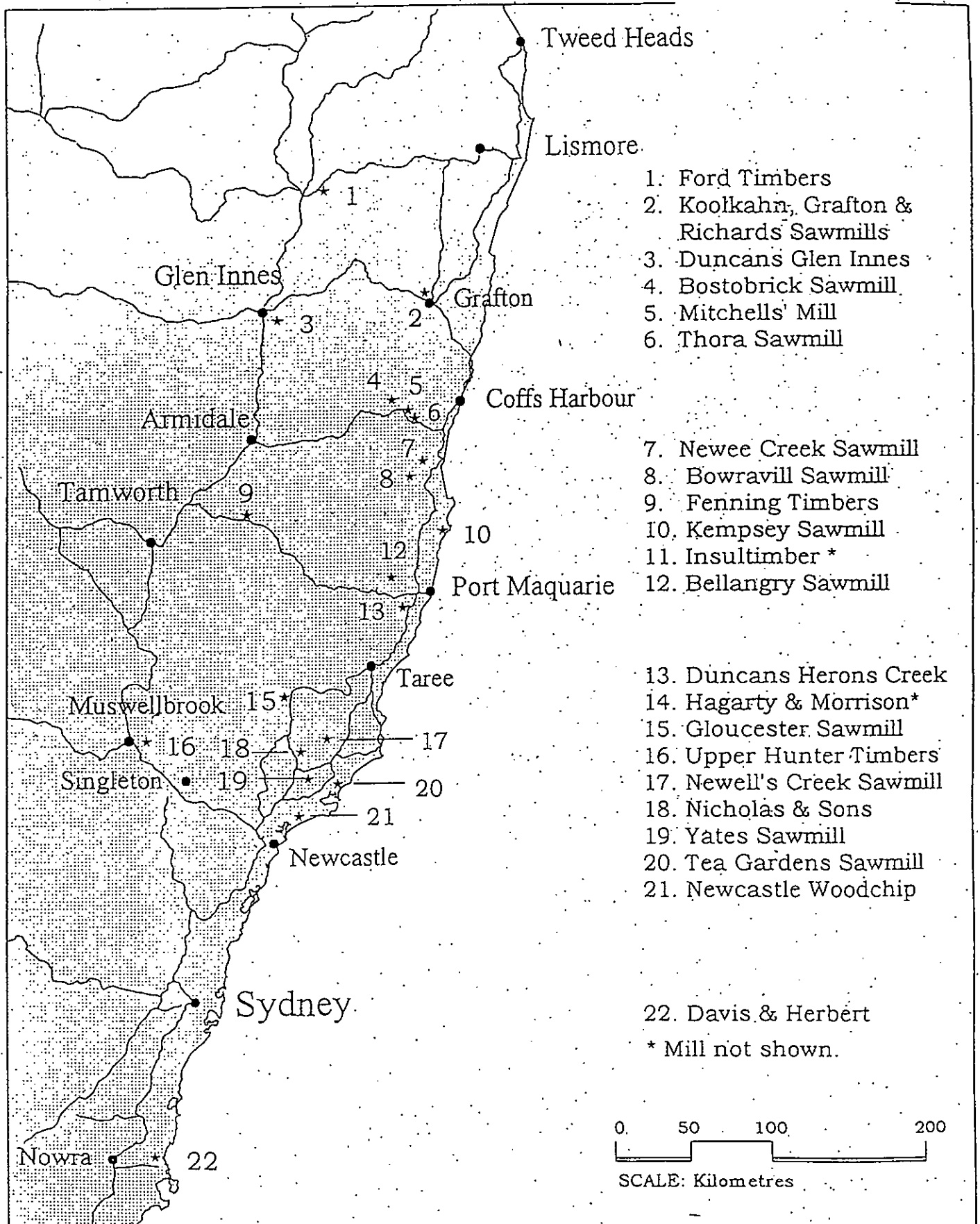
12. The exporter shall take all steps within its power to facilitate the inspection by officers of the Department or of State Forests of New South Wales of any area where the exporter is carrying out operations connected with the export of woodchips under this licence.

OTHER

13. The exporter shall, if requested by the Department, carry out a study of the feasibility of establishing facilities for the further processing in Australia of resources available to the exporter for export as woodchips under this licence and submit the results of that study to the Department within such reasonable time as is specified in the request.

ATTACHMENT 4

Location of woodchip mills



Margules Groome Pöyry Pty Ltd

SEPL EIS

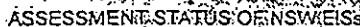
Figure 3.3

Title: Chipper Locations

ATTACHMENT 5

NSW EIS coverage and estimated completion dates

ATTACHMENT 5



Management Area	Actual/Anticipated Exhibition Date	Comments
Mount Royal	23 Sep - 17 Nov 1992	Being reviewed
Wingham	7 Sep - 9 Nov 1992	Determined. Areas deferred for further assessment. General S120 licence issued but has been challenged
Glen Innes	17 Nov 1992 - 29 Jan 1993	Determined. Access to London Bridge SF deferred. No general S120 licence issued.
Dorrig (3 year EIS)	October 1994	
Kempsey/Wauchope	14 Jul - 31 Oct 1993	Determined 25 March 1994. Draft S120 licence received 28 April 1994.
Grafton	August 1994	
Casino/Murwillumbah	July 1995	
Gloucester/Chichester	February 1995	
Tenterfield	October 1994	
Urbenville	February 1995	
Urunga/Coffs Harbour	January 1995	
Walcha/Nundle/Styx River	March 1995	
Warung	September 1995	
Wyong/Cessnock	December 1995	