McLEAN FOREST PROJECT

McLEAN CONSOLIDATED PTY LTD

Report and Recommendations by the Environmental Protection Authority

Environmental Protection Authority
Perth, Western Australia
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SUMMARY AND RECOMMENDATIONS

The Environmental Protection Authority (EPA) has assessed the proposal by McLean Consolidated Pty Ltd to develop a forestry based industry, including the export of woodchips, in the south coastal region centred on Denmark and Albany.

As part of the assessment, an Environmental Review and Management Programme/ Draft Environment Impact Statement (ERMP) was prepared by the proponent to jointly satisfy State and Commonweatlh Government's requirements. (The Commonwealth Government is involved through the requirement for the Minister for Primary Industry to consider the issuing of an export licence for woodchips and accordingly the provisions of the Commonwealth's Environment Protection (Impact of Proposals) Act 1974-87 apply.)

The ERMP was released for public review for 14 weeks, concluding on 6 March 1987 and 548 submissions were received.

In addition to the proponent's documentation and public submissions, the EPA sought specialist advice, carried out an on-site inspection and held a series of meetings in the region. The Authority's assessment contained in this report was based on its evaluation of all this information.

It was apparent to the EPA that the proposal put forward by McLean Consolidated Pty Ltd was complex in nature with a number of key factors unquantified. There exists the potential for both environmental and socio-economic benefits if the proposal proceeds. The environmental benefits relate to the component of the proposal which promotes plantations and re-afforestation of private property, and include reduced soil degradation and protection of water quality.

However, the EPA believes that there are also potential environmental costs. These relate primarily to the component of the proposal which involves clearing of remnant native forest on private property in the region.

Accordingly, the EPA concluded that the estimated amount of resource available from private property in the region, compared to the amount proposed to be used by the proponent, was critical in terms of assessing potential environmental impacts in a regional context.

The Authority sought specialist advice on two aspects of this resource issue. Firstly, the EPA convened a Technical Advisory Group to review principally the methodology used by the proponent in determining resource quantities. The Group's report is Appendix C to this Report. Secondly, the EPA sought detailed advice from the Department of Agriculture on the area of resource available on private property in the region. The Department of Agriculture Report is Appendix B to this Report.

Based on this advice, the EPA has concluded that:

- the proponent has overestimated the amount of resource on private property in the region which could be available to the project. It appears that the main reason for this was that the rate of clearing on private property has been considerably higher than that estimated in the ERMP. The proposal's viability is dependent upon access to this resource and it is apparent that the amount and availability of the resoure cannot be guaranteed;

- based on advice from the Department of Conservation and Land Management, there will no be access to resource from State forest for this proposal; and

- some uncertainty remains as to landowners' attitude to the clearing of native forest on private property over the longer term.

Therefore, should the proposal proceed, it could cause the logging of the major portion of the native forest remaining on private property in the region and that this would be environmentally unacceptable because of the potential adverse environmental impacts on the values of rural woodland for:

- protection against soil degradation;

- protection of water resources;

- protection of flora and fauna; and

- landscape amenity.

RECOMMENDATION 1

The Environmental Protection Authority has concluded that the McLean Forest Project is environmentally unacceptable because:

- **the area of resource in the region was overestimated by the proponent;**

- **access to timber resources on private property cannot be assured;**

- **logging on private property at the level proposed would result in unacceptable environmental impacts; and**

- **the Department of Conservation and Land Management has advised that there will be no access to timber resources from State forest for this proposal**

and accordingly, the Authority recommends that it not proceed.

RECOMMENDATION 2

The Environmental Protection Authority recommends that should any portion of the proposal proceed in the future, the EPA further reports and makes recommendations on specific issues of environmental concern beforee any approvals are given.

1. INTRODUCTION

The McLean Forest Project (the Project) proposes an industry that is based initially on the harvesting of logs from private property and subsequently on plantation resource. A critical part of the Project is that if there is sufficient resource, whether that resource is available and whether the consequences of harvesting are environmentally acceptable. If there is inadequate resource the Project cannot be supported.

The Project is intended to be commercially sustainable over the long term and provide economic and social advantages to the South Coast region. It would see the operation of an existing sawmill at Denmark substantially expanded. Forest resource would be processed at the mill to produce sawn timber for the local Western Australian market as well as woodchips, which would be exported from the port of Albany.

Following the referral of an initial proposal in 1981 by McLean Sawmills (1966) Pty Ltd the Environmental Protection Authority (EPA) considered that the potential environmental impacts of the Project required detailed environmental assessment and called for the preparation of an Environmental Review and Management Programme. An approval to export the woodchips was also required to be given by the Commonwealth. When the Project was revived in 1984, the Minister for Primary Industry designated McLean Sawmills (1966) Pty Ltd as proponent and the Minister for Arts, Heritage & Environment directed the preparation of an Environmental Impact Statement under the provisions of the Commonwealth Environment Protection (Impact of Proposals) Act. In accordance with a Memorandum of Understanding between the Western Australian and Australian Governments, a single document was prepared which complied with the requirements of both the EPA and the Department of Arts, Heritage & Environment (DAHE). The Environmental Review & Management Programme/ Draft Environmental Impact Statement (ERMP) was released for a 14 week public review period, closing on 6 March 1987. During this period, the Authority inspected portions of the Project Area and convened a series of meetings in the region with interested groups and members of the public.

A total of 548 public and Government agency submissions were received on the ERMP. A discussion of the points raised in them is provided in Appendix A of this Report. The submissions were provided to the Company for comment. As required by the Commonwealth and consistent with the normal EPA assessment process, McLean Sawmills (now McLean Consolidated Pty Ltd) has prepared a Final Environmental Impact Statement (Final EIS).

The Environmental Protection Authority has reviewed the environmental implications of this Project through the evaluation of the ERMP, the Final EIS, public and Government agency submissions and specific advice sought from specialists.

2. SUMMARY OF PROPOSAL

McLean Sawmills, a wholly owned subsidiary of TPS Group Ltd, currently operates a sawmill near the town of Denmark, producing both sawn timber for the Perth market and woodchips from the mill residues. The sawlog resource is mainly obtained from State forest under a salvage log licence issued by the Department of Conservation and Land Management (CALM). A small volume of

logs is also taken from private property. Existing production is approximately 17 000 cubic metres of sawn timber for the Perth market and 11 500 cubic metres of woodchips which are sold to the existing export woodchip operator, WA Chip & Pulp Co Pty Ltd.

The Project presented in the ERMP proposes the expansion of the sawmill and wood chipper to cater for a substantial increase in log intake derived from remnant native forest on private property. The logs would be processed to obtain sawn timber, with the bulk of the residue being chipped and exported. An integral part of this activity would be the funding of the regeneration of some portions of native forest and the establishment of tree plantations on private land. In the long-term, this new resource would supply the mill with sawlogs and chiplogs.

The proponent also expects to obtain greater access to the resource in State forest through normal commercial opportunities. This resource would also be milled to produce sawn timber and woodchips.

These two sources of resource, private property and State forest, have been presented in the ERMP as Scenario A and Scenario B respectively. Each of these Scenarios deal with an expansion of forest resource input to the mill above the existing production levels.

In the ERMP, the principal area of interest (the Project Area) encompasses the Shires of Albany, Denmark, Manjimup and Plantagenet. Additional private property resource would be obtained from outside this Project Area, generally between Perth and Mount Barker.

Table 1 indicates the average annual log input requirements of the Project and the proposed sources of the logs. (ERMP, p 48 & 52 and Final EIS, Appendix 4).

Table 1.

LOG SOURCE	SCENARIO A cubic metres	SCENARIO B	TOTAL
private property:			
-within Project Area	144 000	---	144 000
-outside Project Area	30 000	---	30 000
State forest	45 000	110 000	155 000
	219 000	110 000	329 000

The two Scenarios presented in the ERMP outline the proposed resource requirements and operational details for the first 17 years of the Project. They are presented in more detail hereunder.

2.1 SCENARIO A

Scenario A is the main component of the Project. In essence it involves a proposal to log selected stands of native forest located on private property

to produce sawn timber and also woodchips. The preferred species would be Karri (Eucalyptus diversicolor) and Marri (E calophylla), with a very limited intake of first quality Jarrah (E marginata) for sawn timber only.

The volume of logs required to meet the annual output objectives for Scenario A, 47 000 cubic metres of sawn timber and 121 900 cubic metres of woodchips, is approximately 219 000 cubic metres per annum. This is made up of 174 000 cubic metres of additional resource from private land and approximately 45 000 cubic metres from existing salvage operations.

Apart from the existing logs, which largely come from State forest, an additional 144 000 cubic metres per annum would be obtained from private property located within the Project Area and situated outside the low rainfall zone (less than 900 mm isohyet) in the catchments of the Denmark, Kent and Warren Rivers. A further 30 000 cubic metres would be obtained from private property located outside the Project Area by the backloading of trucks returning from Perth.

The ERMP (p 48) estimates that there is approximately 93 600 ha of forested private land that meets these conditions. However, within this area there is forest resource that the Company has indicated would not be logged as part of the Project. For example, resource that falls within the following categories would be likely to be excluded:

(a) pure Jarrah forest (43 325 ha); and

(b) shade trees and small woodland lots less than 1 ha in area (ERMP, p 52).

These exclusions mean that the forested private property potentially available to the Project is 50 275 ha.

Information presented in the ERMP on the private property forest resource is summarised in Table 2.

Table 2.

	AREA (ha)	VOLUME (cubic metres)
Private property	755 100	----
Cleared	611 100	----
Uncleared;	144 000	----
- Catchment	50 400	----
- Jarrah	43 325	4 381 000
- Jarrah-Marri	41 025	4 808 000
- Karri	4 715	943 000
- Karri-Marri	4 535	907 400
- Shade trees & small woodlots	----	1 496 000

Relating these area statements to volume of logs available, the ERMP indicates that the available resource volume declines from 12 535 400 cubic

metres on 93 600 ha to 4 482 400 cubic metres on 50 275 ha (ERMP, p 52). Over the period of the use of private property forest resource (17 years), the Project would use approximately 1 878 000 cubic metres of logs from 26 242 ha supplied from within the Project Area (ERMP, p 55) and 403 000 cubic metres from outside the region. An additional 765 000 cubic metres salvaged from State forest would pass through the mill during this period.

Table 4.6 of the ERMP indicates the nature of the logging that would occur on private property in the Project Area. It shows that of the 50 275 ha potentially available, 24 033 ha would not be logged at all, 15 428 ha would be selection cut or thinned, and 10 814 ha would be clearfelled. Of this last area, 4 840 ha would be expected to be cleared for pasture and 5 974 ha could have plantation species established on it.

Three different types of resource harvesting are proposed. These are:

(a) selection logging, mainly of Jarrah-Marri stands;

(b) clearfelling of Jarrah-Marri or Karri-Marri stands; and

(c) thinning of young, predominantly Karri, regrowth stands.

The potential areas involved in each of these harvesting operations over the first 17 years of the Project, as outlined in Section 4.3.1 of the ERMP, are respectively:

(a) 9 709 ha (approximately 37 percent of the total);

(b) 13 122 ha, with 2 362 ha (9 percent) being regenerated, another 6 036 ha (23 percent) converted to plantation, and 4 724 ha (18 percent) established to pasture; and

(c) 3 411 ha (13 percent).

The Project anticipates an average annual cutover area of 1 544 ha over the first 17 years and a maximum annual cut of 2 014 ha.

An important element of the Project is the establishment of plantations. The species preferred by the Company are Eucalyptus globulus (Tasmanian Bluegum) and Pinus radiata (Monterey Pine). On those sites that are suitable, the planting of Karri could also be considered. The proponent expects a minimum of 19 000 ha of plantations to be established within 14 years as a direct result of this Project (ERMP, p 71).

On the basis of these expectations, the ERMP (p 94) provides a ratio for plantation establishment. It indicates that for every 1 000 cubic metres of logs removed from existing native forest:

(a) 8.2 ha of existing forest would be regenerated; and

(b) 10.1 ha of new plantation would be established.

While this ratio would not be attained each year, especially in the early years, it would be the average achieved over the first 14 years of the Project.

The Company proposes to obtain the private property forest resource by assigning a value to suitable logs. The budgeted figure is $10.29 per cubic

metre for each second grade (salvage) Karri and Marri log. This value would be available to the landowner in accordance with the following criteria:

(a) a payment for the log of between $3.00 and $5.00, averaging $3.50 per cubic metre; and

(b) where the landowner enters a contract to establish a plantation, payment of the remainder of the $10.29 to offset establishment and maintenance costs related to the plantation (ERMP, p 65).

Where costs associated with the plantation are greater than the $10.29, the landowner would have to bear the excess (ERMP, p 67).

In cases where existing private property resource was proposed to be regenerated, payment would be limited to those landowners regenerating Karri, as this is seen by the Company as the only native species with a growth rate that could achieve a viable economic return.

Prior to any logging on private property, the Company has outlined a planning process that would be applied to each individual logging operation. Farm Forest Management Plans would be prepared for each property, outlining the environmental quality of the proposed logging sites, the proposed logging operation, rehabilitation/plantation establishment activities and maintenance programme. These Management Plans would be consolidated into Regional Annual Working Plans, covering the Company's logging activities two years in advance. This would enable appropriate approvals to be obtained and for those approvals to be considered in an overall, regional context.

2.2 SCENARIO B

While the private property resource represents the base level of the Project, the Company also envisages increased access to State forest resource to enhance the economic viability of the proposal. The Company anticipates that, through the tendering processes practised by CALM, it would be possible to increase its intake of resource from State forest. This resource, which would be additional to the 174 000 cubic metres proposed under Scenario A, could be obtained through any of four opportunities:

(a) increase the current intake of Karri salvage quality logs;

(b) increase the existing intake of Marri salvage logs;

(c) being awarded a future Karri thinnings resource tender; and

(d) acquiring another existing salvage log operator (ERMP, p 62).

The ERMP outlined both of these Scenarios in its description of the Project. However, only implications of private property operations under Scenerio A were dicussed in the sections dealing with Environmental Impacts and Environmental Management Prescription.

2.3 HARVESTING

Logging on private property would largely be undertaken over the summer months and logs would be stockpiled at strategic locations throughout the Project Area, thus allowing for retrieval during the remainder of the year.

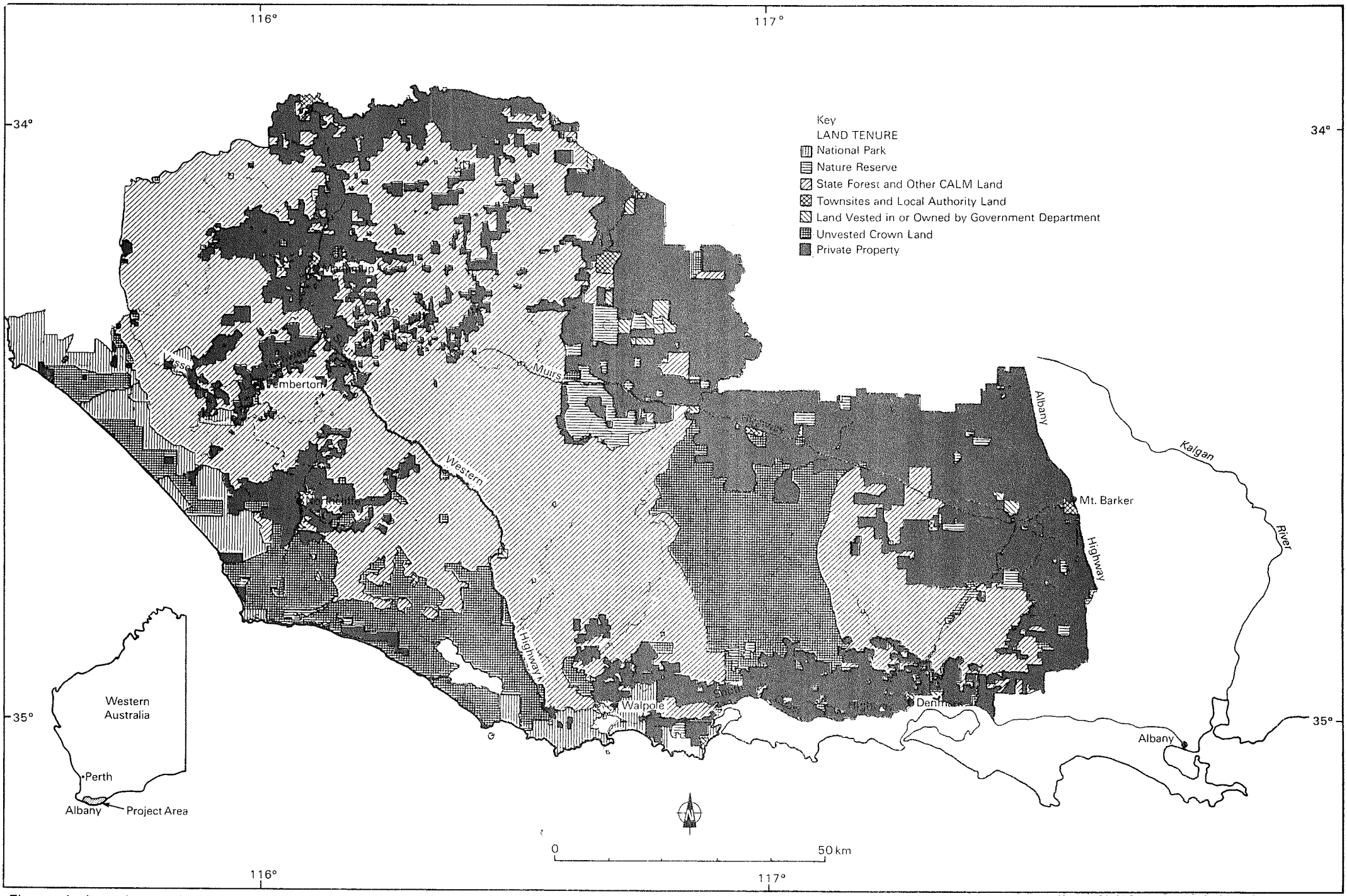


Figure 1. Location and Land Tenure in the Southern Forest Region

(Source: CALM Southern Forest Region Draft Management Plan)

The logs would be transported to the mill at Denmark by road. Transport routes, would involve the main secondary roads and the highways in the region because of the location of the mill relative to the resource. Following processing, the sawn timber would be transported to Perth along the Denmark-Mt Barker Road and Albany Highway while the woodchips would be trucked to Albany along South Coast Highway.

2.4 McLEAN SAWMILL

In order to handle the log volumes envisaged, the existing plant at the mill would need to be expanded. This would involve the installation of a larger woodchipper, and the substantial upgrading of the power supply to the mill. Additional log storage capacity would be developed within the 40 ha existing site.

2.5 ALBANY PORT

At the port, a woodchip stockpile, a transfer system and ship loading facility would be established. At this stage, all of these are proposed to be located on Albany Port Authority land. The stockpile would have a capacity of approximately 50 000 cubic metres, with a height of 20 metres.

2.6 SOCIAL IMPLICATIONS

The Project is seen by the Company as providing a wide range of social and economic benefits. These include improved employment and income opportunities in the region and the nation through increased logging and processing activities, plantation establishment and support service requirements. In addition the replacement of imported timber, enhanced regional amenity values through landscape diversity and improved stability of land tenure patterns are expected to be social benefits to be derived from the Project.

3. PROPONENT'S RESPONSE TO ISSUES RAISED

In the Final EIS, the Company has:

(a) considered and addressed the major issues raised in public and government agency submissions;

(b) provided clarification of a number of points and issues presented in the ERMP; and

(c) had the opportunity to amend the Project following the provision of information in the submissions and from other sources.

The approach taken by the Company in responding to the submissions has been to comment on the issues presented in a single submission, 'The Last Stand' prepared by the Coalition for Denmark's Environment, Australian Conservation Foundation, Conservation Council of WA, and Campaign to Save Native Forests. This was done on the basis that the submission covered the main issues raised in all submissions. Responses were also provided to a series of topics upon which further information was requested by the EPA and DAHE.

As a result of the submissions and other information, a number of amendments to the Project outlined in the ERMP have been made in the Final EIS. The main ones are:

(a) a change in the proposed ratio of area of plantation establishment/ native forest regeneration to volume of native resource taken.

The TPS Group Ltd has undertaken to establish and maintain a minimum of one hectare of plantation on private property for every 1 000 tonnes of woodchips exported. This undertaking applies for the first ten years of operations after securing an export licence, irrespective of the source of the woodchip resource and whether landowners plant trees or not (Final EIS, p 2). This is discussed further in Section 5.4 below.

(b) Logging of private property native forest would occur beyond the first 17 year period.

Private property native forest resource used after Year 17 of the Project would be:

(i) saw log quality;

(ii) Karri stands regenerated as part of the Project, upon maturity;

(iii) stands of suitable species that had reached the end of their useful life; or

(iv) stands for which the landowner had independently obtained the necessary permit to clear (Final EIS p 65).

(c) There will be a reduced input of native forest resource from private property located east of the Frankland River. This is because of the substantial clearing that has occurred in this portion of the Project Area. Based on a comparison of estimates presented in the ERMP and a recent inventory by the Department of Agriculture (Appendix B), the area of potentially suitable forest resource on private property east of the Frankland has declined by about 50 750 ha to 12 452 ha, or approximately 77 per cent (see Table 3 below).

(d) This shortfall in resource will be compensated by the Company actively pursuing greater access and utilisation of State forest resource. This is discussed in more detail in Section 5.3 below.

(e) The exclusion of shade trees from the resources available to the Project may need to modified.

Where suitable individual trees or groups of trees are made available to the Project, they will be sawn and/or chipped. Where shade trees are removed, the Project would require that they be replaced and protective measures introduced (Final EIS, p 143).

(f) Log waste generated at the mill will be burnt in an Olivine smokeless burner system.

4. POTENTIAL BENEFITS OF FORESTS ON FARMS

The retention of native vegetation on farms and the establishment of plantations on previously cleared private property could have environmental benefits in the region. This proposal and initiatives such as CALM's Softwood Sharefarming Scheme have the potential to contribute to the realisation of these benefits.

4.1 STATE CONSERVATION STRATEGY

In the State Conservation Strategy for Western Australia, emphasis is placed on improving the community's capacity to manage the environment, with a view to protecting life support systems while also ensuring the sustainable utilisation of species and ecosystems.

In relation to agricultural areas, the State Conservation Strategy points to the need to prevent further decline in species and genetic diversity, through the encouragement to landowners to conserve habitats and species on their land (DCE, p 15). Other strategies which are closely related to vegetation on farms are the need to modify inappropriate management practices, whereby further efforts are required to halt and reverse the degradation of land and water resources to change present land uses which are no longer sustainable, and the rehabilitation of already degraded land, waters and ecosystems.

4.2 RETENTION OF NATIVE FOREST

Existing remnant native forest has many values and its retention has many important and tangible benefits. These require appropriate management to be undertaken and supported. Some of the benefits are:

(a) the maintenance of water quality in streams and rivers;

(b) improved farming through the enhancement of soil productivity;

(c) sustained yield of wood products derived from private property;

(d) the protection of flora and fauna, through the conservation of species and habitat; and

(e) the contribution to public amenity through scenic values and the opportunities that derive from scenic quality, such as tourism.

For these reasons, the retention of forests on farm land is a better environmental alternative than if they were cleared for possibly non-sustainable economic reasons.

4.3 REVEGETATION OF CLEARED LAND

Once previously cleared land has been revegetated, the benefits mentioned above are possible. There are additional benefits to be gained from the re-establishment of forests. These are the stabilisation of sites that are susceptible to soil erosion, and the restoration of salt affected soils and waters. These have productivity benefits and provide regional development opportunities.

The plantation establishment scheme in the proposal, in conjunction with the CALM scheme, provide opportunities for many hectares of cleared land to be planted to trees.

4.4 ECONOMIC BENEFITS

The ERMP makes frequent reference to the potential economic benefits of the proposal to the region.

These include the processing to higher value products of a resource that would otherwise be wasted through farm clearing, the improved economic viability of farm holdings due to the opportunity to diversify, the direct employment and income opportunities derived from the Project and the assignment of a value to the forests such that they are protected and managed as a productive resource.

4.5 LOCATIONAL REQUIREMENTS

These benefits will only be achieved if farms and forests are in the right locations. For instance, the maximum benefits from the plantations would be gained if they were established on sites that were already salt affected or were susceptible to salinisation or erosion.

Similarly, the retention of vegetation along water courses and on water gaining sites have beneficial implications to water quality.

There is also a need to recognise that the consequences of historical clearing are not uniform throughout the Project Area and that there are areas which require priority attention. The restoration of water quality in the catchments of the Kent, Denmark and Warren Rivers is an example. The identification and assignment of priorities requires community based support and mechanisms, as does the management to achieve the chosen objectives.

5. ENVIRONMENTAL IMPACTS AND MANAGEMENT

While a proposal like the McLean Forest Project has potential benefits, there are also risks of environmental degradation associated with it. This was acknowledged by the Company in the ERMP.

In its assessment of the environmental implications of the Project, the Authority has considered that there are three prime elements into which the Project can be divided and has assessed it accordingly:

(a) the taking of logs from private property;

(b) the gaining of additional resource from State forest; and

(c) the establishment of plantations.

The adequacy of the private property resource and the environmental implications if it was not sufficient was frequently questioned in submissions. In recognition of this, the Authority sought expert advice from several sources. Advice on the potential resource available on private property in the Project Area was sought from the Department of Agriculture. The findings are presented in Appendix B of this Report. In addition, the Authority convened a Technical Advisory Group comprising Dr E Hopkins from CALM and Dr F Hingston from CSIRO. The report of this Group is Appendix C to this report.

5.1 EFFECTS ON NATIVE FOREST ON PRIVATE LAND

Remnant vegetated areas and those that have been replanted have important environmental and social roles. These include the prevention of soil degradation, through their ameliorating effects on land salinisation and erosion and the protection given to crops, pastures and livestock. Native vegetation protects rural landscape values, enhancing its appeal to local

people and visitors, and can have a commercial value to landowners as a renewable resource. The State's natural heritage also benefits through the protection given to flora and fauna species and communities.

Clearing of permanent, deep-rooting native vegetation in the south-western portion of Western Australia has resulted in the following landscape and environmental impacts:

(i) some species of native fauna that rely on native vegetation have disappeared;

(ii) some of the less common native flora species have disappeared; and

(iii) the introduction of shallow-rooting annual crops and pastures has reduced overall transpiration, leading to rising water-tables and consequent water-logging and, in susceptible areas, and increased salt concentrations in soils and surface and groundwaters.

The retention of native vegetation within farming areas was one of the early issues considered by the Land Resource Policy Council (LRPC). A Discussion Paper realeased by the Council in June 1986, entitled "Conservation of Native Vegetation in Farming Areas" outlined the value of remnant vegetation in rural Western Australia. Further information and initiatives have also been promoted through the Greening Australia programme.

In view of the significant values of remnant vegetation, the LRPC made a series of recommendations in its Discussion Paper that were intended to ensure:

". the encouragement of voluntary retention of uncleared native vegetation, and the use of local native species for revegetation in agricultural areas;

. that all government agencies practise and promulgate requirements for native vegetation protection and replanting in the course of their operations;

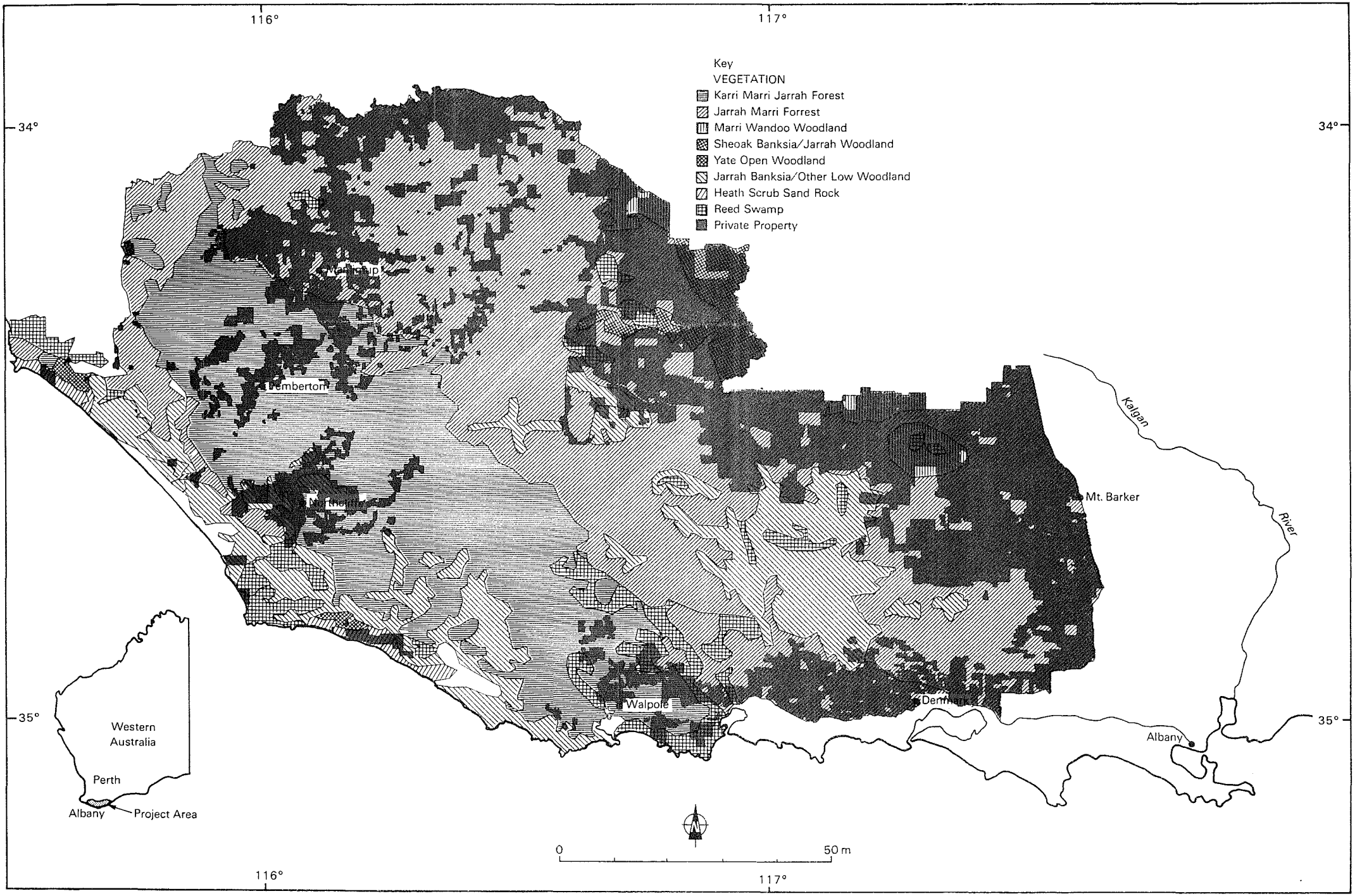
. the active participation of voluntary groups and individuals." (LRPC p 20).

The EPA supports the initiative shown by the LRPC in protecting the many values of remnant vegetation.

It is clear to the EPA that, whether the Project were to proceed or not, clearing of private land will continue. Some of the vegetation on private property, representing tree, understorey, swamp and coastal heath communities will be removed at a rate which is difficult to predict. However, the Project could provide an economic incentive to landowners to remove or alter existing native vegetation.

5.2 PRIVATE PROPERTY RESOURCE AVAILABILITY

A critical issue relating to the Project is the availability of logs of suitable species on private land. Scenario A in the ERMP deals with two log sources. The predominant source is within the Project Area, but some additional resource, comprising about 17 percent of the proposed log intake would be obtained from outside this area.



(Source: CALM Southern Forest Region Draft Management Plan)

As part of its assessment of the Project, the EPA recognised the need to confirm that the estimates of the area of forested private land presented in the ERMP, upon which the Project is based and depends, were reasonable estimates. Appendix 3 in the ERMP presented a comprehensive set of estimates for the area of forested private property in the Project Area as well as providing estimates of the volume of suitable resource that would be available on that land.

The ERMP provided the following information concerning the Project Area and the Project:

(a) the total area is 1 802 000 ha;

(b) clearing of native vegetation on private property was estimated to have been approximately 2.3 percent over the past decade;

(c) there was an estimated 144 000 ha of forested private property;

(d) given the controls on logging and clearing within the declared catchments of the Denmark, Kent and Warren Rivers, some 50 400 ha would be excluded from logging;

(e) as Jarrah would not generally be logged, the remaining available resource (93 600 ha) should be reduced by a further 43 325 ha; and

(f) single shade trees and woodlots having an area of less than 1 ha would not be logged.

These exclusions resulted in the Company estimating that a total of 50 275 ha of forested private property remained within the Project Area. While acknowledging that not all of this area would be made available by landowners, the Company was confident that the 26 242 ha required to provide sufficient volume to meet the Scenario A input objective of 144 000 cubic metres per annum, would be achieved through the provision of the incentive of up to $10.29 for each cubic metre of log removed.

The EPA sought advice from two sources on the area estimates in the ERMP. The Technical Advisory Group was asked to evaluate the approach used by the Company to derive its estimates. Following discussion with CALM and also the consultant to the Company, the Advisory Group concluded that the methodology described in Appendix 3 of the ERMP was appropriate, that the area estimates were within expectations and that the related volume projections were reasonable (Appendix C).

More specific advice was sought from the Department of Agriculture. The Department was requested to provide:

(a) an estimate of the area of native vegetation remaining on private land;

(b) an estimate of the proportion of this native vegetation which could be suitable for use in the Project.

The rate of clearing within the Project Area estimated in the ERMP (p 60) was an average of 2.3 percent per annum over the past decade. This figure was derived from an inspection of clearing that had occurred in several sample areas, in the western and the eastern portions of the Project Area.

The Department of Agriculture used sophisicated computer analysis of aerial and satellite derived images in the preparation of a detailed inventory of forested land within private property in the Project Area. The average annual clearing rate estimated by the Company (2.3 percent) was found to be substantially less than had occurred in the eastern portion, but was a more reasonable approximation in the more heavily forested western portion.

The specific area estimates presented in Appendix 3 of the ERMP recognised different clearing rates for specific areas. However, even the estimated 35 percent clearing of forested land over the period 1973-86 in the Albany area was found to be low. It is apparent that the rapid increase in clearing rates and the older photography and other data used by the Company to derive its estimates, resulted in the ERMP overestimating the potentially available forest areas on private land.

A comparison of the area statements presented in Table 4.1 of the ERMP and those for equivalent areas determined by the Department of Agriculture (Appendix B) are presented in Table 3.

Table 3.

	ERMP (ha)	DEPT OF AGRICULTURE (ha)
Albany	18 500	5 512
Mt Barker	14 700	3 847
Rocky Gully	10 800	9 252
Torbay	2 190	not available
Kalgan	5 800	590
King	1 450	32
Porongorup	3 450	1 084
Denmark	3 150	942
Owingup-Kent	4 910	445
Frankland	6 650	3 986
Manjimup-Pemberton	11 750	11 814
Northcliffe	10 250	5 579
	93 650	43 083

This table clearly illustrates the change in the vegetation status of private property in the Project Area over the period. As the Company used 1981 aerial photographs for the western portion of the Area, its estimates of the forested areas are closer to the 1985 area. The reduction in native forest vegetation in the Project Area has been approximately 46 per cent. Only one area has retained a similar area of native forest. In Manjimup-Pemberton, the area of forest vegetation appears to have increased.

In carrying out its inventory, the Department of Agriculture determined the likely suitability of vegetated land by adopting the soil and vegetation maps of McArthur et al (in press) and Smith (1972). In following this procedure, an indication of the likely presence of Jarrah, Marri and Karri was made. Table 1 in Appendix B presents this information.

These data are relevant because the ERMP indicated that within the 93 650 ha of potentially available forested private property was approximately 43 325 ha of pure Jarrah forest, which would not be logged. Pure Jarrah forest remains in the Project Area despite the clearing that has taken place. Using the information in Appendix B, it is possible to estimate that up to 9 159 ha of the Project Area still has pure Jarrah vegetation. While it is most likely that this estimate is high, it suggests that some portion of the 43 083 ha would not be suitable for logging.

A related factor is that the use of soil units to predict vegetation type can result in overestimates for specific species. The legend from McArthur et al presented in Appendix B indicates that several vegetation types may be present on the same soil unit. For example, the Redmond unit contains Marri-Jarrah on the plains but Melaleuca woodland in depressions. Similarly, the Major Valley (V) and Minor Valley (S) units have different vegetation types according to the location in the valley profile.

If the Department of Agriculture's estimate of forest in the Manjimup-Pemberton area had been prepared using soil information, a portion of the 11 814 ha would not have suitable species present. The ERMP (Appendix 3) indicates that an estimated 5 per cent of the vegetation in this area is not commercially suitable.

Further, it cannot be assumed that all of this forest would be made available to the Project. This is acknowledged in the Final EIS (p 46), which indicates that not all landowners would be prepared to offer their land. This is clearly an important factor relating to resource availability. Information regarding the likely acceptance by farmers of the proposal is limited . Although a survey carried out by the Company indicated that landowners were prepared to consider participation in the Project (Final EIS, p 97), this cannot be accepted as an indication of likely acceptance.

This issue is a major uncertainty in the Company's planning for this Project.

Other land that might be assumed to be available to the Project could be excluded by the Commissioner for Soil Conservation, under the provisions of the Soil and Land Conservation Regulations 1985. Factors considered by the Commissioner include wind and water erosion potential, areas susceptible to salinity, steep slopes and proximity to rivers and streams.

An additional consideration is that some of the land identified by the Department of Agriculture as having forest in early 1986 has since received approval for clearing and is therefore no longer available to the Project. Notices of intent to clear submitted to the Commissioner for Soil Conservation in the Shires of Albany, Denmark and Plantagenet over the period January 1986 to February 1987 covered 449 ha, 962 ha and 922 ha respectively. Applications for the neighbouring Shire of Cranbrook totalled 418 ha. In the Shire of Manjimup and the southern half of Nannup Shire, applications for the clearing of 5 419 ha were received during the same period.

It should be noted that the ERMP indicates that:

" The size of the project has been determined by assessing the size of the existing native forest resource and determining the volume which could be harvested without having an unacceptable adverse impact on the region." and

" The size of the project determined in this way is finely balanced. If the volume taken from private property is smaller the project would be too small to be economically viable." (p 113).

The main points in relation to private property resource availability are that:

. the Department of Agriculture has indicated that up to 43 000 ha of potentially suitable forest remains in the Project Area;

. the Project requires 26 000 ha to achieve the volumes outlined in Scenario A;

. there is no guarantee that the Company would obtain landowner agreement to this resource; and

. even if this area of resource was made available, the proportional loss of remnant native forest vegetation is so high as to be environmentally unacceptible.

5.3 STATE FOREST RESOURCE

One of the consistent concerns expressed in the submissions was that the proponent would be seeking greater access to State forest resource. The main reason was that, as a consequence of the belief by some that the resource available on private property would be limited in absolute terms as well as over time, the Project would eventually require access to an assured supply of resource due to commercial commitments and that this could only come from State forest. This was seen as a threat to the multiple values of the forest and would lead to significantly greater pressure on the limited State forest resource.

As a consequence of the reduced volume of resource now known to be available on private property, the Final EIS indicates that the Project will place greater emphasis on obtaining increased access to State forest. Discussion on this is presented in Sections 4.1.3.2, 5.2, 5.3 and 5.4 of the Final EIS. The following opportunities or alternatives are raised in the Final EIS (Section 5):

(a) State forest situated east of the Frankland River, whereby access to this resource could arise through the State Government changing its allocation policy by -

  (i) providing the resource to two integrated timber industries; or

  (ii) amending the existing WACAP licence to permit woodchip export through Albany; and

(b) increased utilisation of the forest resource remaining following clearfelling operations.

The Authority has sought information on the likelihood of the Company obtaining increased access to State forest resource. In advice to the Authority, the Minister for Conservation and Land Management has relayed advice provided by his Department, which indicated that:

"there is no resource available in State forest either as salvage from the operations of WA Chip and Pulp Co or in areas east of the Frankland River for the McLean Forest Project". (Appendix D.)

5.4 PLANTATIONS

The establishment of plantations in the Project Area is a key part of the McLean Forest Project. It is proposed that this would provide the Project with a sustainable resource in the long-term.

In the ERMP, the Company proposed the establishment of a minimum of 19 000 ha of plantations, comprising approximately 10 000 ha of E globulus and 9 000 ha of P radiata. The only endemic species that would be preferred for establishment would be Karri. On this basis, the Company indicated that they would expect to achieve the establishment of 10.1 ha of new plantations for each 1 000 cubic metres of logs from native forest.

In the Final EIS, this commitment has been changed, to a guaranteed minimum of 1 ha of private property plantation for each 1 000 tonnes of woodchips exported during the first 10 years of the Project. While the proposed level of plantation establishment has declined due to the reduced private property resource, a minimium rate is now guaranteed by the Company.

In its assessment of the woodchip industry in Tasmania, the Commonwealth Government reached an agreement on the continued operation of the existing export licencees. Part of the agreement related to logging on private property, whereby a minimum of four hectares would be regenerated and a further one hectare of plantation established for each 1 000 tonnes of pulpwood extracted from the land.

In its review of the Project, the Technical Advisory Group indicated that the costs associated with the establishment and maintenance of the proposed plantations were up to 25 per cent lower than those experienced by CALM. This has important implications to the total of the funds available to the Company's plantation scheme as well as the likely contribution that the landowner would have to make. The ERMP points out that funding would only be available up to $10.29, with the farmer paying for any cost above this amount.

The Group also noted that the plantation yields for P radiata and also E globulus are considered to be optimistic, except on high quality soils and with the best silvicultural management.

Experience in Western Australia has shown that plantation schemes based on private property have been successful where these have been based on an annuity payment. For example, the CALM Softwood Sharefarming Scheme incorporates an annual payment to the landowner.

An annual payment is seen by landowners in the Project Area as an essential component of any plantation scheme which relies on their participation (Albany Zone, Primary Industry Association of Western Australia). An annuity is not part of the McLean scheme, and its inclusion would affect the level of funds that could be available for the establishment of plantations under the Project (Final EIS, p 96).

As indicated in the ERMP, not all of the land that is subject to clearing will be planted to trees. It is estimated that some 4 840 ha would be converted to pasture. In addition, the ERMP (p 74) indicates that the

plantings would take place preferentially on the better quality sites, where growth can be optimised. However, these better sites may not coincide with areas that would provide the greatest environmental benefit from the plantations. In fact, this is more than likely to occur as it is the poorer quality sites, in terms of rainfall and soils, that would be preferred for environmental reasons but they would generally be expected to have poorer growth and survival rates and therefore be less attractive to the Company.

5.5 SPECIFIC IMPACTS

There are a large number of specific environmental impacts that could arise from operations associated with the McLean Forest Project. The Authority considers that some of the more important impacts relate to salinity, water quality, soil structure, flora and fauna, and transport.

The guidelines provided to the proponent identified a list of issues that needed to be considered in the ERMP (Appendix 1). A description of these impacts and the proposed management prescriptions were presented in Chapters 6 and 8 of the ERMP. Many received further consideration in the Final EIS, where the proponent responded to submissions.

In general, the proponent indicated that the management prescription would be based on CALM's State forest practices, which have been developed for the region in the light of extensive forestry experience.

The Authority has not assessed the more specific impacts of the proposal. These impacts relate to:

(a) harvesting
- erosion
- soil structure
- forest hygiene
- fauna
- flora
- soil salinisation
- water quality
- fire
- alternate resource uses
- aboriginal sites
- aesthetics

(b) transport
- routes
- Denmark Bridge
- noise

(c) tourism

(d) mill
- site suitability
- drainage
- waste disposal
- noise
- aesthetics
- power supply

(e) port
- stockpile siting
- drainage
- aesthetics.

6. CONCLUSION AND RECOMMENDATIONS

The Authority has examined the McLean Forest Project as proposed in the ERMP and the Final EIS. It has considered the issues raised in submissions from the public and Government agencies and has sought specialist advice on several aspects of the proposal. In addition, the Authority made an on-site inspection and held a series of meetings in the region.

The Project is primarily based on logging remnant native forest on private land in the region and, subsequently, on using longer term resource which would be provided from plantations to be established. For this reason the Authority commissioned a study to determine the extent of the private property forest resource. The study found that this resource is significantly less than estimated in the ERMP. Hence, it can be concluded that the remnant forest resource estimated in the ERMP as being potentially available has declined by more than 54 per cent. Of the remaining potentially available remnant forest in the region, the McLean Forest Project would require the logging of approximately 61 per cent of this resource. This would mean a much greater proportion of the remnant forest would be removed compared with the initial estimates of 28 per cent by the proponent. There is also uncertainity regarding the participation of landowners in supplying resource or participating in the establishment of plantations.

The proponent has indicated in the Final EIS that, recognising a decline of private land resource, additional resource from State forest would be actively pursued. Advice provided by CALM through the Minister for Conservation and Land Management indicates that no State forest resource would be made available to the Project.

Although the environmental impact on the available remnant forest would be more severe than the Company has predicted, the Authority acknowledges that there are some aspects of the Project which have potential environmental benefits. These relate to the on-farm regeneration of native forest and establishment of plantations. The potential benefits that could be derived from these operations would be conditional upon the level of management and control applied through and to the Project.

Nevertheless, the EPA has concluded that, based upon the issue of resource availiability from private property and State forest, the project is environmentally unacceptable.

RECOMMENDATION 1

The Environmental Protection Authority has concluded that the McLean Forest Project is environmentally unacceptable because:

- **the area of resource in the region was significantly overestimated by the proponent;**
- **access to timber resources on private property cannot be assured;**
- **logging on private property at the level proposed would result in unacceptable environmental impacts; and**
- **the Department of Conservation and Land Management has advised that there will be no access to timber resources from State forest for this proposal**

and accordingly, the Authority recommends that it not proceed.

RECOMMENDATION 2

The Environmental Protection Authority recommends that should any portion of the proposal proceed in the future, the EPA further reports and makes recommendations on specific issues of environmental concern before any approvals are given.

7. REFERENCES

Department of Conservation and Environment (1987), A State Conservation Strategy for Western Australia (Bulletin 270).

Land Resource Policy Council (1986), Conservation of Native Vegetation in Farming Areas - A Discussion Paper.

McArthur, W & Churchward, M (in press), Landform and Soils of the South Coast and hinterland, WA - Northcliffe to Many Peaks.

Smith, F G (1972), Vegetation Map of Pemberton and Irwin Inlet 1:250 000 WA Department of Agriculture.

APPENDIX A

SUMMARY OF PUBLIC SUBMISSIONS

548 submissions were received by the Environmental Protection Authority, 14 from State and Local Government agencies, and 534 from members of the public. Of these submissions, 502 were generally opposed to the proposal, and 46 generally in favour of it.

In summary, issues raised by the submissions referred to:

. impacts on the physical, biological and social environment; and

. ERMP deficient of information or misleading in some way.

Issues raised included :

. Project would detract from the peaceful environment and relaxed lifestyle to which both residents and tourists are attracted. Many local residents said they would leave the area if an export licence was granted.

. Large increase in road trains on public roads and highways would damage these roads, destroy the tourist value of that road and create major traffic hazards in the district. Increased traffic would also pose a threat to pedestrians in the town centre and school children waiting at bus stops along local roads.

. Mill site is unacceptably close to Denmark townsite and is located on prime real estate, overlooking Wilson Inlet. A mill at this site may limit future urban expansion of Denmark town centre.

. Larger woodchip mill and increased traffic would create smoke, noise and visual pollution.

. Farming economy is already depressed in the area and the financial incentive for farmers to clear remaining stands of native vegetation would be very tempting. It is not fair to leave the issue of protection of remnant stands of native vegetation to farmers.

. Project will have a detrimental impact on local industries, for example spot milling, bee keeping, woodcraft, wildflower and seed gathering industries, and will create local unemployment in the area.

. Project represents unsustainable use of natural resources.

. Morally opposed to any woodchipping proposal.

. Insufficient research has been undertaken on the environmental impact of the proposal.

. ERMP overestimates the amount of forest available for woodchipping. Woodchipping is wasteful of forest resources.

. Destruction of indigenous flora, including forest and understorey species.

. Impact on native fauna through clearing of forest.

. Loss of genetic diversity of flora and fauna.

- Loss of rare, endemic and endangered species of flora and fauna.
- Clearing of forest will exacerbate water quality problems, including salinity, turbidity and eutrophication.
- Clearing of forest will exacerbate soil quality problems, including salinisation, erosion, compaction and leaching.
- Clearing of forest will increase wind and water erosion of soil.
- Risk of spread of jarrah dieback and other forest diseases.
- Project would create pressure to expand cutting in State forest.
- Clearing of forest will increase risk of flooding.
- Establishing plantations will involve increased use of herbicides, pesticides and fertilizers.
- Clearing of forest will lead to further degradation of existing farmland.
- Project will have a detrimental impact on tourism in the area.
- ERMP fails to consider the existing large scale woodchip operations of WACAP on private land in the proposed project region.
- Logistics and practicality of the reforestation programme is unrealistic.
- Additional maintenance costs involved in establishing and maintaining plantations will far outweigh the long term economic advantages.
- No firm commitment has been made by McLean to actually replant areas which have been cleared.
- Plantations of exotic timber such as pine or Tasmanian blue gum should not replace the indigenous tree species.

Suggested recommendations included:

- Federal Government should refuse an export licence for the proposed McLean Forest Project because the project would have severe negative environmental and social impacts.
- State Government should conduct a regional land use study and prepare an overall land management plan of the south coast region. This study should be completed prior to consideration of this or any new industrial projects that rely on exploiting natural resources and involve major land use changes in the south coast region.
- An independently conducted survey should be carried out to assess farmers' attitudes towards forestry schemes and native forest management on private land in the south coast region.
- Thorough floral and faunal surveys should be undertaken and environmental impact studies undertaken on species affected before an export licence is granted.
- Already cleared or degraded pasture land should be planted with trees.

- Only plantation logs, if any, should be used for woodchipping.

- Local, State and Federal Governments should implement properly funded schemes and support stronger efforts to encourage farmers to retain and properly manage native forests on farms and to plant more native trees.

- Other uses for waste timber and cleared pasture land should be considered for example agro-forestry, value added timber processing and mixed crop farming.

- Paper recycling should be encouraged.

- Tourist potential of the area should be increased.

A summary of public response to these issues is attached.

Other issues raised were:

- ERMP conflicts in principle with land management techniques as recommended in existing Government strategies ie the State Conservation Strategy, the National Soil Conservation Programme and Greening Australia.

- ERMP did not discuss measures that could be taken in the event of failure of the proposed plantations, for example through fire, disease or grass-hopper plague infesting newly established plantations as has occurred in the past. The ERMP assumes that the entire requisite number of trees would grow at optimum rates.

- ERMP does not adequately address monitoring of the tree plantation programme, once established, to minimise environmental impact.

- ERMP makes false claims about the extent of woodchip resource wasted through agricultural clearing. The rate of clearing of chippable forests for agriculture on the south coast is less than is currently claimed.

- ERMP makes speculative and untenable claims about employment creation, economic and social benefits, and the likely extent of plantation establishment by farmers.

- Cumulative pressure on the environment, in association with other extractive industries eg mineral, sand mining, silicon smelter, and logging in road and stream reserves is too great.

- Impact on Albany through visual pollution by woodchip stockpiles, and tannin contaminated run off into the harbour.

- Lack of detailed discussion in the ERMP on exact location of the area to be cleared and specific quantities. Maps clearly defining areas which would be affected should be included.

- Clearfelling of native forest would lead to reduced rainfall in the area.

Numerous submissions expressed concern that the ERMP was unreadable to general members of the public as it was ambiguous and unclear in some sections. Many also expressed the need for comprehensive education programmes to be established for local farmers in particular and the community in general.

Issues raised in submissions in favour of the proposal included:

. Proposal will stimulate local industry, increase employment potential in the Denmark - Walpole district and increase export earnings in the future.

. Proposal will lead to diversification of farm income.

. Plantation programme will encourage farmers to grow more trees.

. Woodchipping would utilise timber resources that would otherwise be wasted.

. Proposal will provide farmers with financial aid in reforestation programmes.

. Cleared farmland will be replaced with trees and so be beneficial for soil quality and retard erosion.

. Too many constraints exist already regarding forest clearing bans.

. There will be a net increase in forested areas in the Denmark - Walpole area.

. Plantations of Tasmanian blue gum would reduce water salinity problem as they require large quantities of water and so lower the water table more quickly.

. Stimulate tourist industry as people will want to come and see newly established plantations.

. Exotic forest will be neater to look at than native forest and enhance the natural environment. Farmers will be more inclined to 'look after them'.

. Proposal attractive as long as the annual return payments are broadly in line with the nett return per acre received for conventional grazing endeavours.

. Unnecessary concern over increased traffic as roadworks will adapt accordingly.

SUMMARY OF PUBLIC SUBMISSIONS

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
DETRACT FROM PEACEFUL ENVIRONMENT/LIFESTYLE	*	*		*				*						*				
INCREASED TRAFFIC/DAMAGE TO ROADS	*	*		*				*						*				*
PROXIMITY OF MILL SITE TO DENMARK																		
SMOKE, NOISE AND VISUAL POLLUTION FROM INCREASED TRAFFIC AND MILL																		
ADDITIONAL FINANCIAL INCENTIVE FOR FARMERS TO CLEAR																		
IMPACT ON LOCAL INDUSTRIES (SPOT MILLING, COTTAGE INDUSTRIES)/CREATE UNEMPLOYMENT	*			*				*						*		*	*	*
UNSUSTAINABLE USE OF NATURAL RESOURCES	*	*							*				*	*				*
MORAL AGRUMENT - OPPOSED TO WOODCHIPPING																		
INSUFFICIENT RESEARCH ON ENVIRONMENTAL IMPACT (GENERAL)													*	*				
AMOUNT RESOURCES AVAILABLE OVERESTIMATED		*				*		*				*		*			*	*
WOODCHIPPING WASTEFUL OF FOREST RESOURCES							*			*					*		*	
DESTRUCTION OF INDIGENOUS FLORA (INCLUDING FOREST)	*		*	*	*			*	*	*	*	*	*	*	*	*	*	*
IMPACT ON INDIGENOUS FAUNA	*		*		*			*		*	*	*	*	*	*	*	*	*
LOSS OF GENETIC DIVERSITY													*					*
LOSS OF RARE/ENDEMIC/ENDANGERED SPECIES																		
WATER QUALITY (SALINITY, TURBIDITY, EUTROPHICATION)	*							*		*			*	*	*	*	*	*
SOIL QUALITY (SALINISATION, EROSION, COMPACTION, LEACHING)	*			*					*				*	*	*	*	*	*
EROSION (WIND, WATER)										*			*					
SPREAD OF JARRAH DIEBACK AND OTHER FOREST DISEASES					*			*		*	*		*	*			*	*
INCREASED PRESSURE ON STATE FOREST	*						*					*	*	*				
INCREASED RISK OF FLOODING																		
USE OF HERBICIDES/PESTICIDES/FERTILIZERS													*					
FURTHER DEGRADATION OF EXISTING FARMLAND		*							*								*	*
IMPACT ON TOURISM	*	*		*				*						*	*	*	*	*
WACAP MILL ALREADY AT MANJIMUP	*																*	*
PRACTICALITY/LOGISTICS OF REFORESTATION	*						*						*	*				
EXPENSE - ADDITIONAL MAINTENANCE COSTS WILL OUTWEIGH ECONOMIC ADVANTAGE								*										
NO FIRM COMMITMENT MADE FOR REGENERATION OF NATIVE FOREST OR PLANTATION PLANTING							*	*			*	*		*			*	
EXOTIC SHOULD NOT REPLACE INDIGENOUS									*	*	*		*					
NO EXPORT LICENSE SHOULD BE GRANTED		*			*			*				*		*		*	*	*
REGIONAL LAND USE STUDY SHOULD BE UNDERTAKEN AND GUIDELINES FOR LAND USE DRAFTED								*						*			*	
INDEPENDENT SURVEY BE UNDERTAKEN TO ASSESS FARMER INTEREST AND ATTITUDE TO PROPOSAL														*			*	
FURTHER ENVIRONMENTAL IMPACT STUDIES SHOULD BE UNDERTAKEN																		
ALREADY CLEARED/DEGRADED PASTURE LAND SHOULD BE PLANTED WITH TREES				*						*								
ONLY PLANTATION TIMBER SHOULD BE USED FOR WOODCHIPPING																		
FARMERS SHOULD BE ENCOURAGED TO MAINTAIN, MANAGE AND REGENERATE NATIVE FOREST								*						*			*	
OTHER USES FOR TIMBER/LAND SHOULD BE CONSIDERED EG AGROFORESTRY, MIXED CROPS											*		*	*				*
PAPER RECYCLING SHOULD BE ENCOURAGED							*		*									
TOURIST POTENTIAL SHOULD BE INCREASED	*													*				*
SUBMISSION IN FAVOUR OF PROPOSAL																		

	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
DETRACT FROM PEACEFUL ENVIRONMENT/LIFESTYLE	*			*		*							*			*		
INCREASED TRAFFIC/DAMAGE TO ROADS	*			*					*				*			*	*	*
PROXIMITY OF MILL SITE TO DENMARK	*																	
SMOKE, NOISE AND VISUAL POLLUTION FROM INCREASED TRAFFIC AND MILL	*												*					
ADDITIONAL FINANCIAL INCENTIVE FOR FARMERS TO CLEAR	*							*						*				
IMPACT ON LOCAL INDUSTRIES (SPOT MILLING, COTTAGE INDUSTRIES)/CREATE UNEMPLOYMENT	*	*	*			*	*							*	*		*	*
UNSUSTAINABLE USE OF NATURAL RESOURCES	*	*				*				*								
MORAL AGRUMENT - OPPOSED TO WOODCHIPPING	*								*		*							
INSUFFICIENT RESEARCH ON ENVIRONMENTAL IMPACT (GENERAL)																	*	*
AMOUNT RESOURCES AVAILABLE OVERESTIMATED	*						*											
WOODCHIPPING WASTEFUL OF FOREST RESOURCES	*																	
DESTRUCTION OF INDIGENOUS FLORA (INCLUDING FOREST)	*	*		*		*	*	*			*	*		*				*
IMPACT ON INDIGENOUS FAUNA	*	*		*		*	*	*			*			*				*
LOSS OF GENETIC DIVERSITY						*												
LOSS OF RARE/ENDEMIC/ENDANGERED SPECIES	*					*												*
WATER QUALITY (SALINITY, TURBIDITY, EUTROPHICATION)	*	*	*	*		*				*				*	*	*		*
SOIL QUALITY (SALINISATION, EROSION, COMPACTION, LEACHING)	*					*		*		*						*		*
EROSION (WIND, WATER)	*					*												*
SPREAD OF JARRAH DIEBACK AND OTHER FOREST DISEASES	*						*											*
INCREASED PRESSURE ON STATE FOREST		*																
INCREASED RISK OF FLOODING						*												
USE OF HERBICIDES/PESTICIDES/FERTILIZERS						*												*
FURTHER DEGRADATION OF EXISTING FARMLAND	*		*															*
IMPACT ON TOURISM	*	*	*	*		*	*		*	*			*	*	*	*	*	*
WACAP MILL ALREADY AT MANJIMUP	*						*	*								*	*	*
PRACTICALITY/LOGISTICS OF REFORESTATION	*																	*
EXPENSE - ADDITIONAL MAINTENANCE COSTS WILL OUTWEIGH ECONOMIC ADVANTAGE	*			*		*												*
NO FIRM COMMITMENT MADE FOR REGENERATION OF NATIVE FOREST OR PLANTATION PLANTING	*	*					*			*								*
EXOTIC SHOULD NOT REPLACE INDIGENOUS	*					*						*	*					*
NO EXPORT LICENSE SHOULD BE GRANTED	*		*	*		*	*			*				*		*		
REGIONAL LAND USE STUDY SHOULD BE UNDERTAKEN AND GUIDELINES FOR LAND USE DRAFTED	*						*	*		*								
INDEPENDENT SURVEY BE UNDERTAKEN TO ASSESS FARMER INTEREST AND ATTITUDE TO PROPOSAL				*			*											
FURTHER ENVIRONMENTAL IMPACT STUDIES SHOULD BE UNDERTAKEN																		
ALREADY CLEARED/DEGRADED PASTURE LAND SHOULD BE PLANTED WITH TREES	*	*										*						
ONLY PLANTATION TIMBER SHOULD BE USED FOR WOODCHIPPING	*		*									*						*
FARMERS SHOULD BE ENCOURAGED TO MAINTAIN, MANAGE AND REGENERATE NATIVE FOREST	*									*	*							*
OTHER USES FOR TIMBER/LAND SHOULD BE CONSIDERED EG AGROFORESTRY, MIXED CROPS																		
PAPER RECYCLING SHOULD BE ENCOURAGED																		
TOURIST POTENTIAL SHOULD BE INCREASED	*																	
SUBMISSION IN FAVOUR OF PROPOSAL					*													

	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54
DETRACT FROM PEACEFUL ENVIRONMENT/LIFESTYLE		*														*		
INCREASED TRAFFIC/DAMAGE TO ROADS		*		*								*				*	*	*
PROXIMITY OF MILL SITE TO DENMARK		*										*						
SMOKE, NOISE AND VISUAL POLLUTION FROM INCREASED TRAFFIC AND MILL		*																
ADDITIONAL FINANCIAL INCENTIVE FOR FARMERS TO CLEAR			*															
IMPACT ON LOCAL INDUSTRIES (SPOT MILLING, COTTAGE INDUSTRIES/CREATE UNEMPLOYMENT)		*		*						*		*				*		
UNSUSTAINABLE USE OF NATURAL RESOURCES		*								*	*	*	*		*			
MORAL AGRUMENT - OPPOSED TO WOODCHIPPING	*				*	*												
INSUFFICIENT RESEARCH ON ENVIRONMENTAL IMPACT (GENERAL)		*														*		*
AMOUNT RESOURCES AVAILABLE OVERESTIMATED		*														*		*
WOODCHIPPING WASTEFUL OF FOREST RESOURCES			*		*						*						*	*
DESTRUCTION OF INDIGENOUS FLORA (INCLUDING FOREST)		*				*	*	*	*		*	*		*		*		
IMPACT ON INDIGENOUS FAUNA		*					*	*	*		*	*		*		*		
LOSS OF GENETIC DIVERSITY											*							
LOSS OF RARE/ENDEMIC/ENDANGERED SPECIES		*							*		*					*		
WATER QUALITY (SALINITY, TURBIDITY, EUTROPHICATION)	*	*					*		*	*	*	*	*			*	*	*
SOIL QUALITY (SALINISATION, EROSION, COMPACTION, LEACHING)		*																
EROSION (WIND, WATER)	*	*								*	*							
SPREAD OF JARRAH DIEBACK AND OTHER FOREST DISEASES		*										*						*
INCREASED PRESSURE ON STATE FOREST	*		*														*	*
INCREASED RISK OF FLOODING		*																
USE OF HERBICIDES/PESTICIDES/FERTILIZERS		*																
FURTHER DEGRADATION OF EXISTING FARMLAND	*	*			*								*					
IMPACT ON TOURISM		*	*	*				*				*			*	*	*	*
WACAP MILL ALREADY AT MANJIMUP									*							*		*
PRACTICALITY/LOGISTICS OF REFORESTATION		*																
EXPENSE - ADDITIONAL MAINTENANCE COSTS WILL OUTWEIGH ECONOMIC ADVANTAGE		*						*										
NO FIRM COMMITMENT MADE FOR REGENERATION OF NATIVE FOREST OR PLANTATION PLANTING		*																*
EXOTIC SHOULD NOT REPLACE INDIGENOUS						*				*				*				
NO EXPORT LICENSE SHOULD BE GRANTED	*	*						*		*							*	
REGIONAL LAND USE STUDY SHOULD BE UNDERTAKEN AND GUIDELINES FOR LAND USE DRAFTED	*			*						*							*	
INDEPENDENT SURVEY BE UNDERTAKEN TO ASSESS FARMER INTEREST AND ATTITUDE TO PROPOSAL																*		
FURTHER ENVIRONMENTAL IMPACT STUDIES SHOULD BE UNDERTAKEN																		
ALREADY CLEARED/DEGRADED PASTURE LAND SHOULD BE PLANTED WITH TREES		*				*	*						*					
ONLY PLANTATION TIMBER SHOULD BE USED FOR WOODCHIPPING							*	*				*		*				
FARMERS SHOULD BE ENCOURAGED TO MAINTAIN, MANAGE AND REGENERATE NATIVE FOREST	*																	
OTHER USES FOR TIMBER/LAND SHOULD BE CONSIDERED EG AGROFORESTRY, MIXED CROPS					*					*		*						
PAPER RECYCLING SHOULD BE ENCOURAGED	*															*		
TOURIST POTENTIAL SHOULD BE INCREASED											*							
SUBMISSION IN FAVOUR OF PROPOSAL																		

	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72
DETRACT FROM PEACEFUL ENVIRONMENT/LIFESTYLE									*									
INCREASED TRAFFIC/DAMAGE TO ROADS							*		*		*	*	*					
PROXIMITY OF MILL SITE TO DENMARK							*				*	*						
SMOKE, NOISE AND VISUAL POLLUTION FROM INCREASED TRAFFIC AND MILL							*				*	*				*		
ADDITIONAL FINANCIAL INCENTIVE FOR FARMERS TO CLEAR									*									*
IMPACT ON LOCAL INDUSTRIES (SPOT MILLING, COTTAGE INDUSTRIES)/CREATE UNEMPLOYMENT				*	*		*			*	*	*	*			*	*	*
UNSUSTAINABLE USE OF NATURAL RESOURCES					*				*	*	*							*
MORAL AGRUMENT - OPPOSED TO WOODCHIPPING														*				*
INSUFFICIENT RESEARCH ON ENVIRONMENTAL IMPACT (GENERAL)				*	*			*							*	*	*	
AMOUNT RESOURCES AVAILABLE OVERESTIMATED	*																*	*
WOODCHIPPING WASTEFUL OF FOREST RESOURCES	*		*				*	*		*		*		*			*	*
DESTRUCTION OF INDIGENOUS FLORA (INCLUDING FOREST)	*		*	*	*	*		*		*	*	*	*	*	*	*	*	*
IMPACT ON INDIGENOUS FAUNA	*			*	*	*			*		*	*	*		*	*	*	*
LOSS OF GENETIC DIVERSITY							*		*									
LOSS OF RARE/ENDEMIC/ENDANGERED SPECIES									*		*		*					*
WATER QUALITY (SALINITY, TURBIDITY, EUTROPHICATION)				*	*		*		*		*	*			*	*		*
SOIL QUALITY (SALINISATION, EROSION, COMPACTION, LEACHING)				*	*					*	*				*	*		*
EROSION (WIND, WATER)	*				*										*	*		*
SPREAD OF JARRAH DIEBACK AND OTHER FOREST DISEASES				*					*	*						*		
INCREASED PRESSURE ON STATE FOREST	*					*			*	*		*			*			
INCREASED RISK OF FLOODING																		
USE OF HERBICIDES/PESTICIDES/FERTILIZERS																		
FURTHER DEGRADATION OF EXISTING FARMLAND										*	*	*						*
IMPACT ON TOURISM							*	*	*	*	*	*			*	*	*	*
WACAP MILL ALREADY AT MANJIMUP	*			*								*	*				*	
PRACTICALITY/LOGISTICS OF REFORESTATION																*		
EXPENSE - ADDITIONAL MAINTENANCE COSTS WILL OUTWEIGH ECONOMIC ADVANTAGE											*	*				*		
NO FIRM COMMITMENT MADE FOR REGENERATION OF NATIVE FOREST OR PLANTATION PLANTING	*								*		*				*	*	*	
EXOTIC SHOULD NOT REPLACE INDIGENOUS			*			*						*	*	*		*		*
NO EXPORT LICENSE SHOULD BE GRANTED	*			*	*	*			*	*	*				*		*	
REGIONAL LAND USE STUDY SHOULD BE UNDERTAKEN AND GUIDELINES FOR LAND USE DRAFTED				*				*		*							*	
INDEPENDENT SURVEY BE UNDERTAKEN TO ASSESS FARMER INTEREST AND ATTITUDE TO PROPOSAL				*				*		*					*		*	
FURTHER ENVIRONMENTAL IMPACT STUDIES SHOULD BE UNDERTAKEN							*											
ALREADY CLEARED/DEGRADED PASTURE LAND SHOULD BE PLANTED WITH TREES											*	*	*					*
ONLY PLANTATION TIMBER SHOULD BE USED FOR WOODCHIPPING	*				*		*		*		*	*	*					
FARMERS SHOULD BE ENCOURAGED TO MAINTAIN, MANAGE AND REGENERATE NATIVE FOREST				*	*										*		*	
OTHER USES FOR TIMBER/LAND SHOULD BE CONSIDERED EG AGROFORESTRY, MIXED CROPS																	*	
PAPER RECYCLING SHOULD BE ENCOURAGED						*												*
TOURIST POTENTIAL SHOULD BE INCREASED								*										
SUBMISSION IN FAVOUR OF PROPOSAL		*																

	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90
DETRACT FROM PEACEFUL ENVIRONMENT/LIFESTYLE											*							*
INCREASED TRAFFIC/DAMAGE TO ROADS		*		*						*	*		*		*	*		*
PROXIMITY OF MILL SITE TO DENMARK				*							*		*		*			
SMOKE, NOISE AND VISUAL POLLUTION FROM INCREASED TRAFFIC AND MILL				*							*		*					
ADDITIONAL FINANCIAL INCENTIVE FOR FARMERS TO CLEAR									*									
IMPACT ON LOCAL INDUSTRIES (SPOT MILLING, COTTAGE INDUSTRIES)/CREATE UNEMPLOYMENT		*		*			*	*					*		*			
UNSUSTAINABLE USE OF NATURAL RESOURCES				*			*	*					*					*
MORAL AGRUMENT - OPPOSED TO WOODCHIPPING										*								
INSUFFICIENT RESEARCH ON ENVIRONMENTAL IMPACT (GENERAL)		*					*	*					*	*				
AMOUNT RESOURCES AVAILABLE OVERESTIMATED							*	*			*		*					
WOODCHIPPING WASTEFUL OF FOREST RESOURCES				*	*		*	*					*					
DESTRUCTION OF INDIGENOUS FLORA (INCLUDING FOREST)		*			*		*	*	*		*	*	*	*				
IMPACT ON INDIGENOUS FAUNA		*					*	*			*	*		*				
LOSS OF GENETIC DIVERSITY																		
LOSS OF RARE/ENDEMIC/ENDANGERED SPECIES					*									*				
WATER QUALITY (SALINITY, TURBIDITY, EUTROPHICATION)			*	*				*	*		*		*	*	*			*
SOIL QUALITY (SALINISATION, EROSION, COMPACTION, LEACHING)			*	*				*	*		*	*	*	*	*			*
EROSION (WIND, WATER)				*					*					*	*			
SPREAD OF JARRAH DIEBACK AND OTHER FOREST DISEASES		*					*											
INCREASED PRESSURE ON STATE FOREST							*				*				*			
INCREASED RISK OF FLOODING																		
USE OF HERBICIDES/PESTICIDES/FERTILIZERS																		
FURTHER DEGRADATION OF EXISTING FARMLAND			*	*				*	*		*		*	*	*			*
IMPACT ON TOURISM			*	*			*	*			*		*			*		*
WACAP MILL ALREADY AT MANJIMUP		*					*				*		*		*			
PRACTICALITY/LOGISTICS OF REFORESTATION											*		*					
EXPENSE - ADDITIONAL MAINTENANCE COSTS WILL OUTWEIGH ECONOMIC ADVANTAGE								*			*		*					
NO FIRM COMMITMENT MADE FOR REGENERATION OF NATIVE FOREST OR PLANTATION PLANTING							*	*			*				*			*
EXOTIC SHOULD NOT REPLACE INDIGENOUS			*									*	*	*				
NO EXPORT LICENSE SHOULD BE GRANTED		*			*					*								*
REGIONAL LAND USE STUDY SHOULD BE UNDERTAKEN AND GUIDELINES FOR LAND USE DRAFTED		*																
INDEPENDENT SURVEY BE UNDERTAKEN TO ASSESS FARMER INTEREST AND ATTITUDE TO PROPOSAL		*																
FURTHER ENVIRONMENTAL IMPACT STUDIES SHOULD BE UNDERTAKEN														*				
ALREADY CLEARED/DEGRADED PASTURE LAND SHOULD BE PLANTED WITH TREES							*		*			*						
ONLY PLANTATION TIMBER SHOULD BE USED FOR WOODCHIPPING			*				*		*			*						
FARMERS SHOULD BE ENCOURAGED TO MAINTAIN, MANAGE AND REGENERATE NATIVE FOREST		*																
OTHER USES FOR TIMBER/LAND SHOULD BE CONSIDERED EG AGROFORESTRY, MIXED CROPS		*																
PAPER RECYCLING SHOULD BE ENCOURAGED																		
TOURIST POTENTIAL SHOULD BE INCREASED		*					*											
SUBMISSION IN FAVOUR OF PROPOSAL	*					*											*	

	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108
DETRACT FROM PEACEFUL ENVIRONMENT/LIFESTYLE			*	*													*	*
INCREASED TRAFFIC/DAMAGE TO ROADS			*			*						*					*	*
PROXIMITY OF MILL SITE TO DENMARK																		
SMOKE, NOISE AND VISUAL POLLUTION FROM INCREASED TRAFFIC AND MILL																		
ADDITIONAL FINANCIAL INCENTIVE FOR FARMERS TO CLEAR							*											
IMPACT ON LOCAL INDUSTRIES (SPOT MILLING, COTTAGE INDUSTRIES)/CREATE UNEMPLOYMENT			*	*		*					*	*				*		*
UNSUSTAINABLE USE OF NATURAL RESOURCES			*	*						*				*				
MORAL AGRUMENT - OPPOSED TO WOODCHIPPING																		*
INSUFFICIENT RESEARCH ON ENVIRONMENTAL IMPACT (GENERAL)						*				*		*			*		*	*
AMOUNT RESOURCES AVAILABLE OVERESTIMATED			*			*				*								*
WOODCHIPPING WASTEFUL OF FOREST RESOURCES			*			*	*											*
DESTRUCTION OF INDIGENOUS FLORA (INCLUDING FOREST)			*	*		*	*	*		*	*		*	*		*	*	*
IMPACT ON INDIGENOUS FAUNA			*	*		*				*	*		*				*	*
LOSS OF GENETIC DIVERSITY			*															
LOSS OF RARE/ENDEMIC/ENDANGERED SPECIES			*															
WATER QUALITY (SALINITY, TURBIDITY, EUTROPHICATION)			*	*				*				*				*	*	*
SOIL QUALITY (SALINISATION, EROSION, COMPACTION, LEACHING)			*	*				*				*				*	*	
EROSION (WIND, WATER)				*													*	
SPREAD OF JARRAH DIEBACK AND OTHER FOREST DISEASES										*		*			*			*
INCREASED PRESSURE ON STATE FOREST			*			*											*	
INCREASED RISK OF FLOODING																		
USE OF HERBICIDES/PESTICIDES/FERTILIZERS																		
FURTHER DEGRADATION OF EXISTING FARMLAND			*	*												*		
IMPACT ON TOURISM			*	*										*			*	*
WACAP MILL ALREADY AT MANJIMUP			*			*												
PRACTICALITY/LOGISTICS OF REFORESTATION			*				*						*					
EXPENSE - ADDITIONAL MAINTENANCE COSTS WILL OUTWEIGH ECONOMIC ADVANTAGE						*												
NO FIRM COMMITMENT MADE FOR REGENERATION OF NATIVE FOREST OR PLANTATION PLANTING				*		*	*					*			*		*	
EXOTIC SHOULD NOT REPLACE INDIGENOUS			*	*			*	*					*		*		*	
NO EXPORT LICENSE SHOULD BE GRANTED			*			*		*		*		*		*		*	*	
REGIONAL LAND USE STUDY SHOULD BE UNDERTAKEN AND GUIDELINES FOR LAND USE DRAFTED						*				*		*						*
INDEPENDENT SURVEY BE UNDERTAKEN TO ASSESS FARMER INTEREST AND ATTITUDE TO PROPOSAL			*			*				*								
FURTHER ENVIRONMENTAL IMPACT STUDIES SHOULD BE UNDERTAKEN																		
ALREADY CLEARED/DEGRADED PASTURE LAND SHOULD BE PLANTED WITH TREES							*	*					*					
ONLY PLANTATION TIMBER SHOULD BE USED FOR WOODCHIPPING							*	*										
FARMERS SHOULD BE ENCOURAGED TO MAINTAIN, MANAGE AND REGENERATE NATIVE FOREST						*				*								*
OTHER USES FOR TIMBER/LAND SHOULD BE CONSIDERED EG AGROFORESTRY, MIXED CROPS						*											*	
PAPER RECYCLING SHOULD BE ENCOURAGED											*							
TOURIST POTENTIAL SHOULD BE INCREASED																	*	
SUBMISSION IN FAVOUR OF PROPOSAL	*	*			*				*									

	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126
DETRACT FROM PEACEFUL ENVIRONMENT/LIFESTYLE			*			*	*				*	*	*		*	*		
INCREASED TRAFFIC/DAMAGE TO ROADS		*	*	*		*	*		*		*			*	*	*	*	*
PROXIMITY OF MILL SITE TO DENMARK							*				*			*			*	*
SMOKE, NOISE AND VISUAL POLLUTION FROM INCREASED TRAFFIC AND MILL				*					*		*			*		*		
ADDITIONAL FINANCIAL INCENTIVE FOR FARMERS TO CLEAR	*		*			*	*							*				
IMPACT ON LOCAL INDUSTRIES (SPOT MILLING, COTTAGE INDUSTRIES)/CREATE UNEMPLOYMENT		*			*	*	*				*		*	*	*	*		
UNSUSTAINABLE USE OF NATURAL RESOURCES			*	*		*												
MORAL AGRUMENT - OPPOSED TO WOODCHIPPING						*			*		*	*	*	*		*		
INSUFFICIENT RESEARCH ON ENVIRONMENTAL IMPACT (GENERAL)		*	*	*									*	*	*	*		
AMOUNT RESOURCES AVAILABLE OVERESTIMATED		*	*	*		*								*	*	*		
WOODCHIPPING WASTEFUL OF FOREST RESOURCES			*									*	*	*		*		
DESTRUCTION OF INDIGENOUS FLORA (INCLUDING FOREST)		*	*		*	*			*		*	*	*	*	*	*		
IMPACT ON INDIGENOUS FAUNA		*	*									*		*	*	*		
LOSS OF GENETIC DIVERSITY																		
LOSS OF RARE/ENDEMIC/ENDANGERED SPECIES			*															
WATER QUALITY (SALINITY, TURBIDITY, EUTROPHICATION)	*	*	*	*	*	*			*			*		*	*	*		
SOIL QUALITY (SALINISATION, EROSION, COMPACTION, LEACHING)	*	*				*			*					*	*	*		
EROSION (WIND, WATER)	*								*									
SPREAD OF JARRAH DIEBACK AND OTHER FOREST DISEASES			*											*				
INCREASED PRESSURE ON STATE FOREST		*	*			*								*				
INCREASED RISK OF FLOODING																		
USE OF HERBICIDES/PESTICIDES/FERTILIZERS			*															
FURTHER DEGRADATION OF EXISTING FARMLAND	*					*					*			*				
IMPACT ON TOURISM		*	*	*	*	*	*				*		*		*	*		
WACAP MILL ALREADY AT MANJIMUP														*	*	*		
PRACTICALITY/LOGISTICS OF REFORESTATION		*	*									*		*	*	*		
EXPENSE - ADDITIONAL MAINTENANCE COSTS WILL OUTWEIGH ECONOMIC ADVANTAGE			*				*		*			*		*		*		
NO FIRM COMMITMENT MADE FOR REGENERATION OF NATIVE FOREST OR PLANTATION PLANTING			*	*		*			*					*				
EXOTIC SHOULD NOT REPLACE INDIGENOUS																		
NO EXPORT LICENSE SHOULD BE GRANTED					*													
REGIONAL LAND USE STUDY SHOULD BE UNDERTAKEN AND GUIDELINES FOR LAND USE DRAFTED														*				
INDEPENDENT SURVEY BE UNDERTAKEN TO ASSESS FARMER INTEREST AND ATTITUDE TO PROPOSAL																		
FURTHER ENVIRONMENTAL IMPACT STUDIES SHOULD BE UNDERTAKEN																		
ALREADY CLEARED/DEGRADED PASTURE LAND SHOULD BE PLANTED WITH TREES	*							*				*	*					
ONLY PLANTATION TIMBER SHOULD BE USED FOR WOODCHIPPING		*					*							*				
FARMERS SHOULD BE ENCOURAGED TO MAINTAIN, MANAGE AND REGENERATE NATIVE FOREST											*							
OTHER USES FOR TIMBER/LAND SHOULD BE CONSIDERED EG AGROFORESTRY, MIXED CROPS											*							
PAPER RECYCLING SHOULD BE ENCOURAGED																		
TOURIST POTENTIAL SHOULD BE INCREASED					*						*							
SUBMISSION IN FAVOUR OF PROPOSAL								*		*								

	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144
DETRACT FROM PEACEFUL ENVIRONMENT/LIFESTYLE		*	*	*		*		*									*	
INCREASED TRAFFIC/DAMAGE TO ROADS				*			*		*	*		*		*			*	
PROXIMITY OF MILL SITE TO DENMARK									*			*						
SMOKE, NOISE AND VISUAL POLLUTION FROM INCREASED TRAFFIC AND MILL				*					*									
ADDITIONAL FINANCIAL INCENTIVE FOR FARMERS TO CLEAR							*	*	*									
IMPACT ON LOCAL INDUSTRIES (SPOT MILLING, COTTAGE INDUSTRIES)/CREATE UNEMPLOYMENT			*	*		*	*	*										
UNSUSTAINABLE USE OF NATURAL RESOURCES			*	*		*	*		*	*		*						
MORAL AGRUMENT - OPPOSED TO WOODCHIPPING			*			*						*						
INSUFFICIENT RESEARCH ON ENVIRONMENTAL IMPACT (GENERAL)		*	*				*		*	*		*						*
AMOUNT RESOURCES AVAILABLE OVERESTIMATED		*					*		*	*		*						
WOODCHIPPING WASTEFUL OF FOREST RESOURCES			*					*		*		*						
DESTRUCTION OF INDIGENOUS FLORA (INCLUDING FOREST)	*	*	*	*		*	*	*	*	*		*		*			*	*
IMPACT ON INDIGENOUS FAUNA				*		*	*	*	*	*								*
LOSS OF GENETIC DIVERSITY																		
LOSS OF RARE/ENDEMIC/ENDANGERED SPECIES																		*
WATER QUALITY (SALINITY, TURBIDITY, EUTROPHICATION)		*		*		*	*	*		*				*			*	
SOIL QUALITY (SALINISATION, EROSION, COMPACTION, LEACHING)				*		*	*							*			*	
EROSION (WIND, WATER)										*								
SPREAD OF JARRAH DIEBACK AND OTHER FOREST DISEASES						*		*		*								
INCREASED PRESSURE ON STATE FOREST												*						
INCREASED RISK OF FLOODING																		
USE OF HERBICIDES/PESTICIDES/FERTILIZERS				*														
FURTHER DEGRADATION OF EXISTING FARMLAND		*		*			*	*		*		*						
IMPACT ON TOURISM		*	*	*		*	*		*			*					*	
WACAP MILL ALREADY AT MANJIMUP		*		*													*	
PRACTICALITY/LOGISTICS OF REFORESTATION				*				*	*			*						
EXPENSE - ADDITIONAL MAINTENANCE COSTS WILL OUTWEIGH ECONOMIC ADVANTAGE							*	*										
NO FIRM COMMITMENT MADE FOR REGENERATION OF NATIVE FOREST OR PLANTATION PLANTING							*	*	*			*					*	
EXOTIC SHOULD NOT REPLACE INDIGENOUS			*									*						*
NO EXPORT LICENSE SHOULD BE GRANTED			*	*						*							*	*
REGIONAL LAND USE STUDY SHOULD BE UNDERTAKEN AND GUIDELINES FOR LAND USE DRAFTED		*								*								
INDEPENDENT SURVEY BE UNDERTAKEN TO ASSESS FARMER INTEREST AND ATTITUDE TO PROPOSAL																		
FURTHER ENVIRONMENTAL IMPACT STUDIES SHOULD BE UNDERTAKEN																		
ALREADY CLEARED/DEGRADED PASTURE LAND SHOULD BE PLANTED WITH TREES									*									*
ONLY PLANTATION TIMBER SHOULD BE USED FOR WOODCHIPPING								*	*									
FARMERS SHOULD BE ENCOURAGED TO MAINTAIN, MANAGE AND REGENERATE NATIVE FOREST		*																
OTHER USES FOR TIMBER/LAND SHOULD BE CONSIDERED EG AGROFORESTRY, MIXED CROPS																		
PAPER RECYCLING SHOULD BE ENCOURAGED												*						
TOURIST POTENTIAL SHOULD BE INCREASED																		
SUBMISSION IN FAVOUR OF PROPOSAL					*						*		*		*	*		

	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162
DETRACT FROM PEACEFUL ENVIRONMENT/LIFESTYLE	*	*				*			*		*	*	*		*		*	*
INCREASED TRAFFIC/DAMAGE TO ROADS	*			*		*		*			*						*	
PROXIMITY OF MILL SITE TO DENMARK	*																*	
SMOKE, NOISE AND VISUAL POLLUTION FROM INCREASED TRAFFIC AND MILL	*																*	
ADDITIONAL FINANCIAL INCENTIVE FOR FARMERS TO CLEAR	*	*		*					*			*				*		
IMPACT ON LOCAL INDUSTRIES (SPOT MILLING, COTTAGE INDUSTRIES)/CREATE UNEMPLOYMENT		*		*	*				*			*			*			
UNSUSTAINABLE USE OF NATURAL RESOURCES	*	*		*	*	*			*		*				*	*		
MORAL AGRUMENT - OPPOSED TO WOODCHIPPING		*		*	*				*			*	*					*
INSUFFICIENT RESEARCH ON ENVIRONMENTAL IMPACT (GENERAL)	*			*		*			*		*				*			
AMOUNT RESOURCES AVAILABLE OVERESTIMATED	*			*					*							*		
WOODCHIPPING WASTEFUL OF FOREST RESOURCES	*	*	*	*		*			*		*	*	*	*	*		*	
DESTRUCTION OF INDIGENOUS FLORA (INCLUDING FOREST)	*	*	*	*	*	*			*		*		*	*	*		*	*
IMPACT ON INDIGENOUS FAUNA	*	*			*				*		*		*		*		*	*
LOSS OF GENETIC DIVERSITY																		
LOSS OF RARE/ENDEMIC/ENDANGERED SPECIES						*			*		*		*				*	
WATER QUALITY (SALINITY, TURBIDITY, EUTROPHICATION)	*	*				*			*		*	*					*	
SOIL QUALITY (SALINISATION, EROSION, COMPACTION, LEACHING)	*	*				*			*		*	*					*	
EROSION (WIND, WATER)		*				*			*		*	*						
SPREAD OF JARRAH DIEBACK AND OTHER FOREST DISEASES				*					*		*				*		*	*
INCREASED PRESSURE ON STATE FOREST	*	*	*	*					*			*				*		
INCREASED RISK OF FLOODING																		
USE OF HERBICIDES/PESTICIDES/FERTILIZERS				*														
FURTHER DEGRADATION OF EXISTING FARMLAND		*		*		*			*					*			*	
IMPACT ON TOURISM	*	*			*	*		*	*		*						*	*
WACAP MILL ALREADY AT MANJIMUP	*	*		*	*				*				*			*		
PRACTICALITY/LOGISTICS OF REFORESTATION		*		*		*										*		*
EXPENSE - ADDITIONAL MAINTENANCE COSTS WILL OUTWEIGH ECONOMIC ADVANTAGE	*	*		*							*						*	
NO FIRM COMMITMENT MADE FOR REGENERATION OF NATIVE FOREST OR PLANTATION PLANTING		*		*		*			*									*
EXOTIC SHOULD NOT REPLACE INDIGENOUS	*	*		*					*			*	*			*	*	*
NO EXPORT LICENSE SHOULD BE GRANTED	*	*		*	*				*		*				*	*		
REGIONAL LAND USE STUDY SHOULD BE UNDERTAKEN AND GUIDELINES FOR LAND USE DRAFTED				*	*	*											*	
INDEPENDENT SURVEY BE UNDERTAKEN TO ASSESS FARMER INTEREST AND ATTITUDE TO PROPOSAL				*											*			
FURTHER ENVIRONMENTAL IMPACT STUDIES SHOULD BE UNDERTAKEN									*									
ALREADY CLEARED/DEGRADED PASTURE LAND SHOULD BE PLANTED WITH TREES				*					*		*						*	
ONLY PLANTATION TIMBER SHOULD BE USED FOR WOODCHIPPING			*	*		*					*							
FARMERS SHOULD BE ENCOURAGED TO MAINTAIN, MANAGE AND REGENERATE NATIVE FOREST	*			*									*		*		*	
OTHER USES FOR TIMBER/LAND SHOULD BE CONSIDERED EG AGROFORESTRY, MIXED CROPS	*								*									
PAPER RECYCLING SHOULD BE ENCOURAGED																	*	
TOURIST POTENTIAL SHOULD BE INCREASED									*									
SUBMISSION IN FAVOUR OF PROPOSAL							*			*								

	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180
DETRACT FROM PEACEFUL ENVIRONMENT/LIFESTYLE	*					*					*		*		*			*
INCREASED TRAFFIC/DAMAGE TO ROADS	*								*	*	*	*		*		*		*
PROXIMITY OF MILL SITE TO DENMARK										*		*		*				
SMOKE, NOISE AND VISUAL POLLUTION FROM INCREASED TRAFFIC AND MILL										*						*		
ADDITIONAL FINANCIAL INCENTIVE FOR FARMERS TO CLEAR																		
IMPACT ON LOCAL INDUSTRIES (SPOT MILLING, COTTAGE INDUSTRIES)/CREATE UNEMPLOYMENT										*	*	*		*				*
UNSUSTAINABLE USE OF NATURAL RESOURCES		*	*							*	*	*		*				
MORAL AGRUMENT - OPPOSED TO WOODCHIPPING		*								*					*		*	*
INSUFFICIENT RESEARCH ON ENVIRONMENTAL IMPACT (GENERAL)									*	*	*							
AMOUNT RESOURCES AVAILABLE OVERESTIMATED										*	*	*		*				
WOODCHIPPING WASTEFUL OF FOREST RESOURCES							*	*		*		*		*		*	*	*
DESTRUCTION OF INDIGENOUS FLORA (INCLUDING FOREST)	*	*				*	*	*	*		*	*	*	*		*	*	*
IMPACT ON INDIGENOUS FAUNA	*	*				*		*	*		*	*		*		*		*
LOSS OF GENETIC DIVERSITY																		
LOSS OF RARE/ENDEMIC/ENDANGERED SPECIES		*	*					*										
WATER QUALITY (SALINITY, TURBIDITY, EUTROPHICATION)	*									*		*		*				*
SOIL QUALITY (SALINISATION, EROSION, COMPACTION, LEACHING)	*									*								
EROSION (WIND, WATER)										*		*		*				
SPREAD OF JARRAH DIEBACK AND OTHER FOREST DISEASES		*							*		*							
INCREASED PRESSURE ON STATE FOREST		*	*							*	*							
INCREASED RISK OF FLOODING																		
USE OF HERBICIDES/PESTICIDES/FERTILIZERS																		
FURTHER DEGRADATION OF EXISTING FARMLAND																		
IMPACT ON TOURISM	*		*							*	*	*						*
WACAP MILL ALREADY AT MANJIMUP																		
PRACTICALITY/LOGISTICS OF REFORESTATION		*	*					*										
EXPENSE - ADDITIONAL MAINTENANCE COSTS WILL OUTWEIGH ECONOMIC ADVANTAGE		*																
NO FIRM COMMITMENT MADE FOR REGENERATION OF NATIVE FOREST OR PLANTATION PLANTING		*	*									*		*				
EXOTIC SHOULD NOT REPLACE INDIGENOUS								*	*	*	*	*				*		
NO EXPORT LICENSE SHOULD BE GRANTED				*							*							
REGIONAL LAND USE STUDY SHOULD BE UNDERTAKEN AND GUIDELINES FOR LAND USE DRAFTED																		
INDEPENDENT SURVEY BE UNDERTAKEN TO ASSESS FARMER INTEREST AND ATTITUDE TO PROPOSAL									*									
FURTHER ENVIRONMENTAL IMPACT STUDIES SHOULD BE UNDERTAKEN																		
ALREADY CLEARED/DEGRADED PASTURE LAND SHOULD BE PLANTED WITH TREES							*	*			*							
ONLY PLANTATION TIMBER SHOULD BE USED FOR WOODCHIPPING							*	*			*					*		*
FARMERS SHOULD BE ENCOURAGED TO MAINTAIN, MANAGE AND REGENERATE NATIVE FOREST		*	*					*	*		*							
OTHER USES FOR TIMBER/LAND SHOULD BE CONSIDERED EG AGROFORESTRY, MIXED CROPS											*							
PAPER RECYCLING SHOULD BE ENCOURAGED																*		
TOURIST POTENTIAL SHOULD BE INCREASED											*							
SUBMISSION IN FAVOUR OF PROPOSAL					*													

	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198
DETRACT FROM PEACEFUL ENVIRONMENT/LIFESTYLE	*		*	*		*		*			*		*		*			*
INCREASED TRAFFIC/DAMAGE TO ROADS	*	*	*	*	*		*			*	*		*		*	*		*
PROXIMITY OF MILL SITE TO DENMARK							*			*	*		*		*			
SMOKE, NOISE AND VISUAL POLLUTION FROM INCREASED TRAFFIC AND MILL							*			*	*		*		*	*		
ADDITIONAL FINANCIAL INCENTIVE FOR FARMERS TO CLEAR			*						*	*	*	*			*			
IMPACT ON LOCAL INDUSTRIES (SPOT MILLING, COTTAGE INDUSTRIES)/CREATE UNEMPLOYMENT					*				*	*	*		*		*			*
UNSUSTAINABLE USE OF NATURAL RESOURCES		*			*				*	*	*	*			*	*		*
MORAL AGRUMENT - OPPOSED TO WOODCHIPPING					*				*			*			*			
INSUFFICIENT RESEARCH ON ENVIRONMENTAL IMPACT (GENERAL)			*		*	*			*	*	*				*	*		
AMOUNT RESOURCES AVAILABLE OVERESTIMATED		*			*					*	*				*			*
WOODCHIPPING WASTEFUL OF FOREST RESOURCES			*	*	*		*		*	*	*	*			*			
DESTRUCTION OF INDIGENOUS FLORA (INCLUDING FOREST)	*	*	*	*	*	*		*	*	*	*	*	*		*	*		*
IMPACT ON INDIGENOUS FAUNA		*	*	*		*		*			*		*		*			*
LOSS OF GENETIC DIVERSITY			*					*			*							
LOSS OF RARE/ENDEMIC/ENDANGERED SPECIES			*								*				*			*
WATER QUALITY (SALINITY, TURBIDITY, EUTROPHICATION)	*	*	*			*		*		*	*		*		*			*
SOIL QUALITY (SALINISATION, EROSION, COMPACTION, LEACHING)		*						*			*				*			
EROSION (WIND, WATER)		*				*		*		*								*
SPREAD OF JARRAH DIEBACK AND OTHER FOREST DISEASES			*						*	*	*				*			
INCREASED PRESSURE ON STATE FOREST											*				*	*		*
INCREASED RISK OF FLOODING																		
USE OF HERBICIDES/PESTICIDES/FERTILIZERS											*							
FURTHER DEGRADATION OF EXISTING FARMLAND	*				*			*					*			*		
IMPACT ON TOURISM			*	*	*		*	*	*	*	*		*		*			*
WACAP MILL ALREADY AT MANJIMUP									*	*	*				*	*		
PRACTICALITY/LOGISTICS OF REFORESTATION		*	*						*	*	*	*			*			
EXPENSE - ADDITIONAL MAINTENANCE COSTS WILL OUTWEIGH ECONOMIC ADVANTAGE				*			*			*	*				*	*		
NO FIRM COMMITMENT MADE FOR REGENERATION OF NATIVE FOREST OR PLANTATION PLANTING										*		*				*		
EXOTIC SHOULD NOT REPLACE INDIGENOUS			*	*		*			*	*	*				*	*		
NO EXPORT LICENSE SHOULD BE GRANTED								*		*	*	*			*			
REGIONAL LAND USE STUDY SHOULD BE UNDERTAKEN AND GUIDELINES FOR LAND USE DRAFTED									*				*		*			
INDEPENDENT SURVEY BE UNDERTAKEN TO ASSESS FARMER INTEREST AND ATTITUDE TO PROPOSAL									*	*					*	*		
FURTHER ENVIRONMENTAL IMPACT STUDIES SHOULD BE UNDERTAKEN						*									*			
ALREADY CLEARED/DEGRADED PASTURE LAND SHOULD BE PLANTED WITH TREES			*			*				*	*				*	*		*
ONLY PLANTATION TIMBER SHOULD BE USED FOR WOODCHIPPING			*			*				*					*	*		*
FARMERS SHOULD BE ENCOURAGED TO MAINTAIN, MANAGE AND REGENERATE NATIVE FOREST		*							*	*								
OTHER USES FOR TIMBER/LAND SHOULD BE CONSIDERED EG AGROFORESTRY, MIXED CROPS															*			
PAPER RECYCLING SHOULD BE ENCOURAGED																		
TOURIST POTENTIAL SHOULD BE INCREASED			*			*	*		*	*	*				*	*		*
SUBMISSION IN FAVOUR OF PROPOSAL														*			*	

	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216
DETRACT FROM PEACEFUL ENVIRONMENT/LIFESTYLE					*				*	*	*			*		*		*
INCREASED TRAFFIC/DAMAGE TO ROADS	*				*		*	*	*	*	*					*		
PROXIMITY OF MILL SITE TO DENMARK					*						*							
SMOKE, NOISE AND VISUAL POLLUTION FROM INCREASED TRAFFIC AND HILL	*				*													
ADDITIONAL FINANCIAL INCENTIVE FOR FARMERS TO CLEAR					*		*	*	*									*
IMPACT ON LOCAL INDUSTRIES (SPOT MILLING, COTTAGE INDUSTRIES)/CREATE UNEMPLOYMENT	*	*		*	*	*	*		*		*			*	*			*
UNSUSTAINABLE USE OF NATURAL RESOURCES				*	*	*		*	*			*	*	*			*	*
MORAL AGRUMENT - OPPOSED TO WOODCHIPPING	*	*		*	*			*				*					*	*
INSUFFICIENT RESEARCH ON ENVIRONMENTAL IMPACT (GENERAL)			*		*	*					*			*				
AMOUNT RESOURCES AVAILABLE OVERESTIMATED					*	*			*		*			*				
WOODCHIPPING WASTEFUL OF FOREST RESOURCES		*		*	*	*			*	*	*			*			*	
DESTRUCTION OF INDIGENOUS FLORA (INCLUDING FOREST)	*	*		*	*	*			*	*	*	*		*	*		*	*
IMPACT ON INDIGENOUS FAUNA	*			*	*	*				*	*			*	*			*
LOSS OF GENETIC DIVERSITY						*					*							
LOSS OF RARE/ENDEMIC/ENDANGERED SPECIES				*	*	*								*				
WATER QUALITY (SALINITY, TURBIDITY, EUTROPHICATION)	*				*	*			*		*			*	*			*
SOIL QUALITY (SALINISATION, EROSION, COMPACTION, LEACHING)					*	*								*				
EROSION (WIND, WATER)					*	*								*	*			
SPREAD OF JARRAH DIEBACK AND OTHER FOREST DISEASES				*	*	*								*				*
INCREASED PRESSURE ON STATE FOREST					*	*								*	*			
INCREASED RISK OF FLOODING																		
USE OF HERBICIDES/PESTICIDES/FERTILIZERS														*				
FURTHER DEGRADATION OF EXISTING FARMLAND						*												*
IMPACT ON TOURISM				*		*	*		*	*	*				*	*		*
WACAP MILL ALREADY AT MANJIMUP						*	*							*				
PRACTICALITY/LOGISTICS OF REFORESTATION											*							
EXPENSE - ADDITIONAL MAINTENANCE COSTS WILL OUTWEIGH ECONOMIC ADVANTAGE				*							*			*				
NO FIRM COMMITMENT MADE FOR REGENERATION OF NATIVE FOREST OR PLANTATION PLANTING						*								*				*
EXOTIC SHOULD NOT REPLACE INDIGENOUS				*	*	*			*		*				*			*
NO EXPORT LICENSE SHOULD BE GRANTED			*	*		*			*					*	*			
REGIONAL LAND USE STUDY SHOULD BE UNDERTAKEN AND GUIDELINES FOR LAND USE DRAFTED					*									*				
INDEPENDENT SURVEY BE UNDERTAKEN TO ASSESS FARMER INTEREST AND ATTITUDE TO PROPOSAL																		
FURTHER ENVIRONMENTAL IMPACT STUDIES SHOULD BE UNDERTAKEN						*								*				
ALREADY CLEARED/DEGRADED PASTURE LAND SHOULD BE PLANTED WITH TREES						*		*	*		*							
ONLY PLANTATION TIMBER SHOULD BE USED FOR WOODCHIPPING									*									
FARMERS SHOULD BE ENCOURAGED TO MAINTAIN, MANAGE AND REGENERATE NATIVE FOREST					*	*		*						*				
OTHER USES FOR TIMBER/LAND SHOULD BE CONSIDERED EG AGROFORESTRY, MIXED CROPS					*	*					*							
PAPER RECYCLING SHOULD BE ENCOURAGED																		
TOURIST POTENTIAL SHOULD BE INCREASED				*	*		*		*									
SUBMISSION IN FAVOUR OF PROPOSAL																		

	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234
DETRACT FROM PEACEFUL ENVIRONMENT/LIFESTYLE			*		*	*		*	*							*		
INCREASED TRAFFIC/DAMAGE TO ROADS	*			*	*	*		*	*		*		*			*		
PROXIMITY OF MILL SITE TO DENMARK				*												*		
SMOKE, NOISE AND VISUAL POLLUTION FROM INCREASED TRAFFIC AND MILL				*														
ADDITIONAL FINANCIAL INCENTIVE FOR FARMERS TO CLEAR				*		*			*									
IMPACT ON LOCAL INDUSTRIES (SPOT MILLING, COTTAGE INDUSTRIES)/CREATE UNEMPLOYMENT	*		*			*							*	*		*		
UNSUSTAINABLE USE OF NATURAL RESOURCES	*		*	*		*			*		*			*				
MORAL AGRUMENT - OPPOSED TO WOODCHIPPING	*							*	*								*	*
INSUFFICIENT RESEARCH ON ENVIRONMENTAL IMPACT (GENERAL)				*		*	*							*		*		
AMOUNT RESOURCES AVAILABLE OVERESTIMATED				*		*								*				
WOODCHIPPING WASTEFUL OF FOREST RESOURCES	*		*	*		*		*						*			*	
DESTRUCTION OF INDIGENOUS FLORA (INCLUDING FOREST)	*		*	*		*		*	*					*		*	*	*
IMPACT ON INDIGENOUS FAUNA				*		*			*							*	*	*
LOSS OF GENETIC DIVERSITY				*														
LOSS OF RARE/ENDEMIC/ENDANGERED SPECIES				*												*		
WATER QUALITY (SALINITY, TURBIDITY, EUTROPHICATION)	*		*	*		*					*		*			*		
SOIL QUALITY (SALINISATION, EROSION, COMPACTION, LEACHING)				*												*	*	
EROSION (WIND, WATER)																	*	
SPREAD OF JARRAH DIEBACK AND OTHER FOREST DISEASES																		
INCREASED PRESSURE ON STATE FOREST				*										*				*
INCREASED RISK OF FLOODING																		
USE OF HERBICIDES/PESTICIDES/FERTILIZERS													*					
FURTHER DEGRADATION OF EXISTING FARMLAND				*													*	
IMPACT ON TOURISM			*	*	*	*			*		*			*		*	*	
WACAP MILL ALREADY AT MANJIMUP				*			*				*							
PRACTICALITY/LOGISTICS OF REFORESTATION				*														
EXPENSE - ADDITIONAL MAINTENANCE COSTS WILL OUTWEIGH ECONOMIC ADVANTAGE				*									*					
NO FIRM COMMITMENT MADE FOR REGENERATION OF NATIVE FOREST OR PLANTATION PLANTING				*		*			*		*			*				
EXOTIC SHOULD NOT REPLACE INDIGENOUS	*		*	*		*		*	*	*				*				*
NO EXPORT LICENSE SHOULD BE GRANTED				*		*					*			*		*	*	*
REGIONAL LAND USE STUDY SHOULD BE UNDERTAKEN AND GUIDELINES FOR LAND USE DRAFTED														*				
INDEPENDENT SURVEY BE UNDERTAKEN TO ASSESS FARMER INTEREST AND ATTITUDE TO PROPOSAL														*				
FURTHER ENVIRONMENTAL IMPACT STUDIES SHOULD BE UNDERTAKEN																		
ALREADY CLEARED/DEGRADED PASTURE LAND SHOULD BE PLANTED WITH TREES			*			*		*					*			*		
ONLY PLANTATION TIMBER SHOULD BE USED FOR WOODCHIPPING																*		
FARMERS SHOULD BE ENCOURAGED TO MAINTAIN, MANAGE AND REGENERATE NATIVE FOREST														*				
OTHER USES FOR TIMBER/LAND SHOULD BE CONSIDERED EG AGROFORESTRY, MIXED CROPS																		
PAPER RECYCLING SHOULD BE ENCOURAGED																		
TOURIST POTENTIAL SHOULD BE INCREASED																	*	
SUBMISSION IN FAVOUR OF PROPOSAL		*								*		*			*			

	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252
DETRACT FROM PEACEFUL ENVIRONMENT/LIFESTYLE	*	*			*		*			*	*	*	*	*			*	*
INCREASED TRAFFIC/DAMAGE TO ROADS	*							*		*			*	*			*	*
PROXIMITY OF MILL SITE TO DENMARK	*									*				*			*	*
SMOKE, NOISE AND VISUAL POLLUTION FROM INCREASED TRAFFIC AND MILL	*													*			*	*
ADDITIONAL FINANCIAL INCENTIVE FOR FARMERS TO CLEAR				*						*				*				*
IMPACT ON LOCAL INDUSTRIES (SPOT MILLING, COTTAGE INDUSTRIES)/CREATE UNEMPLOYMENT					*							*	*	*		*	*	*
UNSUSTAINABLE USE OF NATURAL RESOURCES				*			*			*		*	*	*	*		*	*
MORAL AGRUMENT - OPPOSED TO WOODCHIPPING	*						*									*		*
INSUFFICIENT RESEARCH ON ENVIRONMENTAL IMPACT (GENERAL)				*	*			*	*			*	*	*	*		*	*
AMOUNT RESOURCES AVAILABLE OVERESTIMATED				*				*		*				*	*		*	*
WOODCHIPPING WASTEFUL OF FOREST RESOURCES	*	*				*	*	*		*		*	*	*		*	*	
DESTRUCTION OF INDIGENOUS FLORA (INCLUDING FOREST)	*	*			*	*	*	*	*	*		*	*	*	*	*	*	*
IMPACT ON INDIGENOUS FAUNA	*	*			*		*	*	*	*			*	*	*	*	*	*
LOSS OF GENETIC DIVERSITY		*								*			*	*	*	*		
LOSS OF RARE/ENDEMIC/ENDANGERED SPECIES					*	*	*						*				*	
WATER QUALITY (SALINITY, TURBIDITY, EUTROPHICATION)	*	*			*		*			*	*		*	*	*	*	*	*
SOIL QUALITY (SALINISATION, EROSION, COMPACTION, LEACHING)					*					*			*	*	*			
EROSION (WIND, WATER)		*			*									*	*			
SPREAD OF JARRAH DIEBACK AND OTHER FOREST DISEASES					*			*	*					*	*		*	
INCREASED PRESSURE ON STATE FOREST		*		*		*								*	*			*
INCREASED RISK OF FLOODING																		
USE OF HERBICIDES/PESTICIDES/FERTILIZERS															*			*
FURTHER DEGRADATION OF EXISTING FARMLAND		*		*						*	*			*				*
IMPACT ON TOURISM		*			*			*				*	*	*		*	*	
WACAP MILL ALREADY AT MANJIMUP								*	*					*			*	*
PRACTICALITY/LOGISTICS OF REFORESTATION				*					*	*			*	*				*
EXPENSE - ADDITIONAL MAINTENANCE COSTS WILL OUTWEIGH ECONOMIC ADVANTAGE				*	*				*	*			*	*		*		*
NO FIRM COMMITMENT MADE FOR REGENERATION OF NATIVE FOREST OR PLANTATION PLANTING		*		*						*				*			*	*
EXOTIC SHOULD NOT REPLACE INDIGENOUS		*		*			*							*	*		*	*
NO EXPORT LICENSE SHOULD BE GRANTED		*		*				*		*		*		*				
REGIONAL LAND USE STUDY SHOULD BE UNDERTAKEN AND GUIDELINES FOR LAND USE DRAFTED									*			*		*				
INDEPENDENT SURVEY BE UNDERTAKEN TO ASSESS FARMER INTEREST AND ATTITUDE TO PROPOSAL				*				*						*			*	
FURTHER ENVIRONMENTAL IMPACT STUDIES SHOULD BE UNDERTAKEN														*				
ALREADY CLEARED/DEGRADED PASTURE LAND SHOULD BE PLANTED WITH TREES		*												*	*		*	*
ONLY PLANTATION TIMBER SHOULD BE USED FOR WOODCHIPPING		*													*	*		
FARMERS SHOULD BE ENCOURAGED TO MAINTAIN, MANAGE AND REGENERATE NATIVE FOREST		*												*			*	
OTHER USES FOR TIMBER/LAND SHOULD BE CONSIDERED EG AGROFORESTRY, MIXED CROPS														*	*			
PAPER RECYCLING SHOULD BE ENCOURAGED														*				
TOURIST POTENTIAL SHOULD BE INCREASED													*	*				
SUBMISSION IN FAVOUR OF PROPOSAL			*															

	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270
DETRACT FROM PEACEFUL ENVIRONMENT/LIFESTYLE	*		*	*	*	*				*		*	*					
INCREASED TRAFFIC/DAMAGE TO ROADS	*		*	*	*	*		*		*	*	*						*
PROXIMITY OF MILL SITE TO DENMARK	*			*							*					*		
SMOKE, NOISE AND VISUAL POLLUTION FROM INCREASED TRAFFIC AND MILL	*																	
ADDITIONAL FINANCIAL INCENTIVE FOR FARMERS TO CLEAR	*					*				*		*				*		*
IMPACT ON LOCAL INDUSTRIES (SPOT MILLING, COTTAGE INDUSTRIES)/CREATE UNEMPLOYMENT	*		*	*		*		*				*						
UNSUSTAINABLE USE OF NATURAL RESOURCES	*	*	*	*	*	*			*				*	*		*		*
MORAL AGRUMENT - OPPOSED TO WOODCHIPPING		*	*					*	*									*
INSUFFICIENT RESEARCH ON ENVIRONMENTAL IMPACT (GENERAL)	*		*	*		*				*		*		*	*			
AMOUNT RESOURCES AVAILABLE OVERESTIMATED	*		*	*		*								*				*
WOODCHIPPING WASTEFUL OF FOREST RESOURCES	*	*	*		*	*							*	*				*
DESTRUCTION OF INDIGENOUS FLORA (INCLUDING FOREST)	*	*	*	*	*	*		*				*		*				*
IMPACT ON INDIGENOUS FAUNA	*		*	*	*	*		*				*			*			
LOSS OF GENETIC DIVERSITY	*														*			
LOSS OF RARE/ENDEMIC/ENDANGERED SPECIES	*			*								*			*			
WATER QUALITY (SALINITY, TURBIDITY, EUTROPHICATION)	*		*	*	*	*		*		*		*				*		
SOIL QUALITY (SALINISATION, EROSION, COMPACTION, LEACHING)					*	*		*		*						*		
EROSION (WIND, WATER)										*						*		*
SPREAD OF JARRAH DIEBACK AND OTHER FOREST DISEASES	*		*	*														
INCREASED PRESSURE ON STATE FOREST	*			*		*												
INCREASED RISK OF FLOODING																		
USE OF HERBICIDES/PESTICIDES/FERTILIZERS																		
FURTHER DEGRADATION OF EXISTING FARMLAND	*	*	*	*				*								*		*
IMPACT ON TOURISM	*		*	*	*			*		*		*						*
WACAP MILL ALREADY AT MANJIMUP	*		*	*												*		
PRACTICALITY/LOGISTICS OF REFORESTATION	*								*			*				*		
EXPENSE - ADDITIONAL MAINTENANCE COSTS WILL OUTWEIGH ECONOMIC ADVANTAGE	*								*			*				*		
NO FIRM COMMITMENT MADE FOR REGENERATION OF NATIVE FOREST OR PLANTATION PLANTING	*			*					*			*		*		*		*
EXOTIC SHOULD NOT REPLACE INDIGENOUS	*	*				*		*	*			*		*		*		*
NO EXPORT LICENSE SHOULD BE GRANTED	*	*	*	*	*			*	*			*	*	*	*			
REGIONAL LAND USE STUDY SHOULD BE UNDERTAKEN AND GUIDELINES FOR LAND USE DRAFTED	*		*	*														
INDEPENDENT SURVEY BE UNDERTAKEN TO ASSESS FARMER INTEREST AND ATTITUDE TO PROPOSAL	*			*														
FURTHER ENVIRONMENTAL IMPACT STUDIES SHOULD BE UNDERTAKEN	*			*						*								
ALREADY CLEARED/DEGRADED PASTURE LAND SHOULD BE PLANTED WITH TREES	*			*	*	*		*		*	*	*				*		
ONLY PLANTATION TIMBER SHOULD BE USED FOR WOODCHIPPING										*		*				*		
FARMERS SHOULD BE ENCOURAGED TO MAINTAIN, MANAGE AND REGENERATE NATIVE FOREST	*		*															
OTHER USES FOR TIMBER/LAND SHOULD BE CONSIDERED EG AGROFORESTRY, MIXED CROPS				*		*				*								
PAPER RECYCLING SHOULD BE ENCOURAGED											*							
TOURIST POTENTIAL SHOULD BE INCREASED								*		*	*							
SUBMISSION IN FAVOUR OF PROPOSAL							*										*	

	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288
DETRACT FROM PEACEFUL ENVIRONMENT/LIFESTYLE	*			*		*							*					*
INCREASED TRAFFIC/DAMAGE TO ROADS	*	*		*				*	*				*		*	*	*	*
PROXIMITY OF MILL SITE TO DENMARK				*														
SMOKE, NOISE AND VISUAL POLLUTION FROM INCREASED TRAFFIC AND MILL				*														
ADDITIONAL FINANCIAL INCENTIVE FOR FARMERS TO CLEAR																*		*
IMPACT ON LOCAL INDUSTRIES (SPOT MILLING, COTTAGE INDUSTRIES)/CREATE UNEMPLOYMENT		*		*			*	*	*		*							
UNSUSTAINABLE USE OF NATURAL RESOURCES		*					*	*	*	*	*	*				*		
MORAL AGRUMENT - OPPOSED TO WOODCHIPPING			*				*		*			*				*	*	
INSUFFICIENT RESEARCH ON ENVIRONMENTAL IMPACT (GENERAL)			*				*	*	*	*							*	
AMOUNT RESOURCES AVAILABLE OVERESTIMATED		*						*	*	*	*	*						
WOODCHIPPING WASTEFUL OF FOREST RESOURCES							*		*	*		*					*	
DESTRUCTION OF INDIGENOUS FLORA (INCLUDING FOREST)		*	*	*		*	*	*	*	*	*	*				*	*	*
IMPACT ON INDIGENOUS FAUNA		*	*	*		*	*		*	*	*						*	
LOSS OF GENETIC DIVERSITY			*					*	*			*						
LOSS OF RARE/ENDEMIC/ENDANGERED SPECIES			*	*		*	*			*	*							
WATER QUALITY (SALINITY, TURBIDITY, EUTROPHICATION)		*		*		*	*	*	*		*		*				*	*
SOIL QUALITY (SALINISATION, EROSION, COMPACTION, LEACHING)		*							*	*								
EROSION (WIND, WATER)				*		*	*			*	*	*						
SPREAD OF JARRAH DIEBACK AND OTHER FOREST DISEASES									*									
INCREASED PRESSURE ON STATE FOREST									*									
INCREASED RISK OF FLOODING																		
USE OF HERBICIDES/PESTICIDES/FERTILIZERS																		
FURTHER DEGRADATION OF EXISTING FARMLAND									*							*	*	
IMPACT ON TOURISM		*		*		*	*	*	*		*		*					*
WACAP MILL ALREADY AT MANJIMUP		*						*	*								*	*
PRACTICALITY/LOGISTICS OF REFORESTATION				*														
EXPENSE - ADDITIONAL MAINTENANCE COSTS WILL OUTWEIGH ECONOMIC ADVANTAGE				*				*										*
NO FIRM COMMITMENT MADE FOR REGENERATION OF NATIVE FOREST OR PLANTATION PLANTING				*				*	*		*							*
EXOTIC SHOULD NOT REPLACE INDIGENOUS	*					*	*	*	*			*						
NO EXPORT LICENSE SHOULD BE GRANTED		*	*	*		*	*		*		*		*	*			*	*
REGIONAL LAND USE STUDY SHOULD BE UNDERTAKEN AND GUIDELINES FOR LAND USE DRAFTED									*									
INDEPENDENT SURVEY BE UNDERTAKEN TO ASSESS FARMER INTEREST AND ATTITUDE TO PROPOSAL																		
FURTHER ENVIRONMENTAL IMPACT STUDIES SHOULD BE UNDERTAKEN																		
ALREADY CLEARED/DEGRADED PASTURE LAND SHOULD BE PLANTED WITH TREES		*		*						*		*	*					
ONLY PLANTATION TIMBER SHOULD BE USED FOR WOODCHIPPING				*									*					
FARMERS SHOULD BE ENCOURAGED TO MAINTAIN, MANAGE AND REGENERATE NATIVE FOREST									*	*								
OTHER USES FOR TIMBER/LAND SHOULD BE CONSIDERED EG AGROFORESTRY, MIXED CROPS												*						
PAPER RECYCLING SHOULD BE ENCOURAGED																		
TOURIST POTENTIAL SHOULD BE INCREASED						*												
SUBMISSION IN FAVOUR OF PROPOSAL					*										*			

	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306
DETRACT FROM PEACEFUL ENVIRONMENT/LIFESTYLE	*					*										*	*	*
INCREASED TRAFFIC/DAMAGE TO ROADS	*				*	*					*			*		*	*	
PROXIMITY OF MILL SITE TO DENMARK																		
SMOKE, NOISE AND VISUAL POLLUTION FROM INCREASED TRAFFIC AND MILL						*										*		
ADDITIONAL FINANCIAL INCENTIVE FOR FARMERS TO CLEAR																		
IMPACT ON LOCAL INDUSTRIES (SPOT MILLING, COTTAGE INDUSTRIES)/CREATE UNEMPLOYMENT	*										*	*				*	*	
UNSUSTAINABLE USE OF NATURAL RESOURCES	*		*				*	*		*			*	*		*	*	*
MORAL AGRUMENT - OPPOSED TO WOODCHIPPING	*	*					*	*				*	*	*		*	*	*
INSUFFICIENT RESEARCH ON ENVIRONMENTAL IMPACT (GENERAL)							*			*	*					*		*
AMOUNT RESOURCES AVAILABLE OVERESTIMATED																		
WOODCHIPPING WASTEFUL OF FOREST RESOURCES	*		*		*		*	*				*	*	*		*	*	*
DESTRUCTION OF INDIGENOUS FLORA (INCLUDING FOREST)	*	*	*		*	*		*		*	*	*	*			*	*	*
IMPACT ON INDIGENOUS FAUNA	*	*			*	*		*			*	*					*	*
LOSS OF GENETIC DIVERSITY																	*	
LOSS OF RARE/ENDEMIC/ENDANGERED SPECIES						*						*					*	*
WATER QUALITY (SALINITY, TURBIDITY, EUTROPHICATION)				*	*	*	*			*		*				*	*	*
SOIL QUALITY (SALINISATION, EROSION, COMPACTION, LEACHING)		*			*	*	*			*		*	*			*		
EROSION (WIND, WATER)		*			*	*	*					*				*		
SPREAD OF JARRAH DIEBACK AND OTHER FOREST DISEASES			*			*	*			*	*					*		
INCREASED PRESSURE ON STATE FOREST					*													
INCREASED RISK OF FLOODING																		
USE OF HERBICIDES/PESTICIDES/FERTILIZERS																	*	
FURTHER DEGRADATION OF EXISTING FARMLAND				*												*		*
IMPACT ON TOURISM	*				*	*		*		*	*	*	*	*		*	*	*
WACAP MILL ALREADY AT MANJIMUP			*				*				*						*	
PRACTICALITY/LOGISTICS OF REFORESTATION					*													
EXPENSE - ADDITIONAL MAINTENANCE COSTS WILL OUTWEIGH ECONOMIC ADVANTAGE												*				*	*	*
NO FIRM COMMITMENT MADE FOR REGENERATION OF NATIVE FOREST OR PLANTATION PLANTING																	*	
EXOTIC SHOULD NOT REPLACE INDIGENOUS					*													
NO EXPORT LICENSE SHOULD BE GRANTED	*				*					*	*	*		*			*	*
REGIONAL LAND USE STUDY SHOULD BE UNDERTAKEN AND GUIDELINES FOR LAND USE DRAFTED			*								*							
INDEPENDENT SURVEY BE UNDERTAKEN TO ASSESS FARMER INTEREST AND ATTITUDE TO PROPOSAL											*							
FURTHER ENVIRONMENTAL IMPACT STUDIES SHOULD BE UNDERTAKEN																		
ALREADY CLEARED/DEGRADED PASTURE LAND SHOULD BE PLANTED WITH TREES			*	*				*										*
ONLY PLANTATION TIMBER SHOULD BE USED FOR WOODCHIPPING			*	*				*									*	*
FARMERS SHOULD BE ENCOURAGED TO MAINTAIN, MANAGE AND REGENERATE NATIVE FOREST											*						*	
OTHER USES FOR TIMBER/LAND SHOULD BE CONSIDERED EG AGROFORESTRY, MIXED CROPS						*												
PAPER RECYCLING SHOULD BE ENCOURAGED																		*
TOURIST POTENTIAL SHOULD BE INCREASED	*					*				*							*	
SUBMISSION IN FAVOUR OF PROPOSAL									*						*			

	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324
DETRACT FROM PEACEFUL ENVIRONMENT/LIFESTYLE	*	*	*					*		*	*			*	*	*	*	*
INCREASED TRAFFIC/DAMAGE TO ROADS			*			*		*		*				*	*	*	*	*
PROXIMITY OF MILL SITE TO DENMARK																		
SMOKE, NOISE AND VISUAL POLLUTION FROM INCREASED TRAFFIC AND MILL								*						*	*	*	*	*
ADDITIONAL FINANCIAL INCENTIVE FOR FARMERS TO CLEAR	*			*								*	*					
IMPACT ON LOCAL INDUSTRIES (SPOT MILLING, COTTAGE INDUSTRIES)/CREATE UMEMPLOYMENT	*		*					*		*		*	*		*	*	*	*
UNSUSTAINABLE USE OF NATURAL RESOURCES	*		*	*		*		*		*	*	*	*		*	*	*	*
MORAL AGRUMENT - OPPOSED TO WOODCHIPPING	*	*									*	*						
INSUFFICIENT RESEARCH ON ENVIRONMENTAL IMPACT (GENERAL)			*	*	*		*											
AMOUNT RESOURCES AVAILABLE OVERESTIMATED	*			*				*										
WOODCHIPPING WASTEFUL OF FOREST RESOURCES	*		*			*				*	*	*			*	*	*	*
DESTRUCTION OF INDIGENOUS FLORA (INCLUDING FOREST)	*	*	*	*		*	*			*	*	*	*		*	*	*	*
IMPACT ON INDIGENOUS FAUNA	*		*	*	*		*			*	*	*			*	*	*	*
LOSS OF GENETIC DIVERSITY				*								*						
LOSS OF RARE/ENDEMIC/ENDANGERED SPECIES	*		*	*	*		*			*	*	*			*			
WATER QUALITY (SALINITY, TURBIDITY, EUTROPHICATION)	*	*	*	*				*		*	*	*						
SOIL QUALITY (SALINISATION, EROSION, COMPACTION, LEACHING)	*	*	*	*														
EROSION (WIND, WATER)			*															
SPREAD OF JARRAH DIEBACK AND OTHER FOREST DISEASES			*	*	*					*	*	*	*					
INCREASED PRESSURE ON STATE FOREST			*					*				*	*					
INCREASED RISK OF FLOODING																		
USE OF HERBICIDES/PESTICIDES/FERTILIZERS				*														
FURTHER DEGRADATION OF EXISTING FARMLAND	*		*	*				*				*	*					
IMPACT ON TOURISM	*	*	*					*		*	*	*	*	*				
WACAP MILL ALREADY AT MANJIMUP			*					*		*	*		*		*	*	*	*
PRACTICALITY/LOGISTICS OF REFORESTATION				*				*			*		*					
EXPENSE - ADDITIONAL MAINTENANCE COSTS WILL OUTWEIGH ECONOMIC ADVANTAGE	*		*	*				*		*		*						
NO FIRM COMMITMENT MADE FOR REGENERATION OF NATIVE FOREST OR PLANTATION PLANTING	*							*					*					
EXOTIC SHOULD NOT REPLACE INDIGENOUS	*	*	*					*			*							
NO EXPORT LICENSE SHOULD BE GRANTED	*	*								*	*	*	*	*	*	*	*	*
REGIONAL LAND USE STUDY SHOULD BE UNDERTAKEN AND GUIDELINES FOR LAND USE DRAFTED								*		*								
INDEPENDENT SURVEY BE UNDERTAKEN TO ASSESS FARMER INTEREST AND ATTITUDE TO PROPOSAL													*					
FURTHER ENVIRONMENTAL IMPACT STUDIES SHOULD BE UNDERTAKEN				*	*								*					
ALREADY CLEARED/DEGRADED PASTURE LAND SHOULD BE PLANTED WITH TREES						*		*	*	*		*						
ONLY PLANTATION TIMBER SHOULD BE USED FOR WOODCHIPPING								*		*								
FARMERS SHOULD BE ENCOURAGED TO MAINTAIN, MANAGE AND REGENERATE NATIVE FOREST																		
OTHER USES FOR TIMBER/LAND SHOULD BE CONSIDERED EG AGROFORESTRY, MIXED CROPS																		
PAPER RECYCLING SHOULD BE ENCOURAGED						*												
TOURIST POTENTIAL SHOULD BE INCREASED								*		*			*					
SUBMISSION IN FAVOUR OF PROPOSAL									*									

	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342
DETRACT FROM PEACEFUL ENVIRONMENT/LIFESTYLE	*	*				*								*	*			
INCREASED TRAFFIC/DAMAGE TO ROADS	*	*				*			*	*	*				*		*	
PROXIMITY OF MILL SITE TO DENMARK																		
SMOKE, NOISE AND VISUAL POLLUTION FROM INCREASED TRAFFIC AND MILL	*	*													*			
ADDITIONAL FINANCIAL INCENTIVE FOR FARMERS TO CLEAR												*			*	*		
IMPACT ON LOCAL INDUSTRIES (SPOT MILLING, COTTAGE INDUSTRIES)/CREATE UNEMPLOYMENT	*	*	*		*	*				*	*						*	
UNSUSTAINABLE USE OF NATURAL RESOURCES	*	*	*		*									*	*			
MORAL AGRUMENT - OPPOSED TO WOODCHIPPING			*		*	*	*	*	*	*		*	*		*	*		
INSUFFICIENT RESEARCH ON ENVIRONMENTAL IMPACT (GENERAL)									*			*						
AMOUNT RESOURCES AVAILABLE OVERESTIMATED				*														
WOODCHIPPING WASTEFUL OF FOREST RESOURCES	*	*							*	*								*
DESTRUCTION OF INDIGENOUS FLORA (INCLUDING FOREST)	*	*	*		*	*	*		*	*	*		*	*	*	*	*	*
IMPACT ON INDIGENOUS FAUNA	*	*	*		*	*			*	*	*			*	*		*	
LOSS OF GENETIC DIVERSITY			*		*													
LOSS OF RARE/ENDEMIC/ENDANGERED SPECIES									*	*					*			
WATER QUALITY (SALINITY, TURBIDITY, EUTROPHICATION)									*	*	*	*	*	*		*	*	
SOIL QUALITY (SALINISATION, EROSION, COMPACTION, LEACHING)			*		*				*			*			*	*		
EROSION (WIND, WATER)			*		*				*									
SPREAD OF JARRAH DIEBACK AND OTHER FOREST DISEASES			*		*	*			*	*		*					*	
INCREASED PRESSURE ON STATE FOREST														*				
INCREASED RISK OF FLOODING																		
USE OF HERBICIDES/PESTICIDES/FERTILIZERS																*		
FURTHER DEGRADATION OF EXISTING FARMLAND			*		*					*			*					
IMPACT ON TOURISM						*				*	*				*	*	*	*
WACAP MILL ALREADY AT MANJIMUP	*	*												*			*	
PRACTICALITY/LOGISTICS OF REFORESTATION																		
EXPENSE - ADDITIONAL MAINTENANCE COSTS WILL OUTWEIGH ECONOMIC ADVANTAGE				*		*									*			
NO FIRM COMMITMENT MADE FOR REGENERATION OF NATIVE FOREST OR PLANTATION PLANTING			*		*							*			*	*		
EXOTIC SHOULD NOT REPLACE INDIGENOUS			*		*				*	*					*	*		
NO EXPORT LICENSE SHOULD BE GRANTED	*	*	*		*						*			*	*	*	*	
REGIONAL LAND USE STUDY SHOULD BE UNDERTAKEN AND GUIDELINES FOR LAND USE DRAFTED												*					*	
INDEPENDENT SURVEY BE UNDERTAKEN TO ASSESS FARMER INTEREST AND ATTITUDE TO PROPOSAL																	*	
FURTHER ENVIRONMENTAL IMPACT STUDIES SHOULD BE UNDERTAKEN												*						
ALREADY CLEARED/DEGRADED PASTURE LAND SHOULD BE PLANTED WITH TREES															*			*
ONLY PLANTATION TIMBER SHOULD BE USED FOR WOODCHIPPING																		*
FARMERS SHOULD BE ENCOURAGED TO MAINTAIN, MANAGE AND REGENERATE NATIVE FOREST																	*	
OTHER USES FOR TIMBER/LAND SHOULD BE CONSIDERED EG AGROFORESTRY, MIXED CROPS														*				
PAPER RECYCLING SHOULD BE ENCOURAGED														*				
TOURIST POTENTIAL SHOULD BE INCREASED															*	*		
SUBMISSION IN FAVOUR OF PROPOSAL				*														

	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360
DETRACT FROM PEACEFUL ENVIRONMENT/LIFESTYLE	*			*				*	*		*					*		
INCREASED TRAFFIC/DAMAGE TO ROADS	*				*						*		*			*		
PROXIMITY OF MILL SITE TO DENMARK																*		
SMOKE, NOISE AND VISUAL POLLUTION FROM INCREASED TRAFFIC AND MILL									*									
ADDITIONAL FINANCIAL INCENTIVE FOR FARMERS TO CLEAR	*								*			*	*	*		*		
IMPACT ON LOCAL INDUSTRIES (SPOT MILLING, COTTAGE INDUSTRIES)/CREATE UNEMPLOYMENT									*	*	*		*			*		
UNSUSTAINABLE USE OF NATURAL RESOURCES		*			*				*	*	*		*					*
MORAL AGRUMENT - OPPOSED TO WOODCHIPPING	*	*			*			*	*		*						*	
INSUFFICIENT RESEARCH ON ENVIRONMENTAL IMPACT (GENERAL)		*	*								*	*	*	*				*
AMOUNT RESOURCES AVAILABLE OVERESTIMATED			*						*	*	*	*						
WOODCHIPPING WASTEFUL OF FOREST RESOURCES				*	*				*		*	*		*		*	*	
DESTRUCTION OF INDIGENOUS FLORA (INCLUDING FOREST)		*	*	*	*			*	*		*			*	*	*		*
IMPACT ON INDIGENOUS FAUNA			*	*				*										*
LOSS OF GENETIC DIVERSITY																		
LOSS OF RARE/ENDEMIC/ENDANGERED SPECIES																*		
WATER QUALITY (SALINITY, TURBIDITY, EUTROPHICATION)				*					*	*		*	*	*			*	*
SOIL QUALITY (SALINISATION, EROSION, COMPACTION, LEACHING)				*					*	*							*	*
EROSION (WIND, WATER)									*					*			*	
SPREAD OF JARRAH DIEBACK AND OTHER FOREST DISEASES								*	*				*	*			*	*
INCREASED PRESSURE ON STATE FOREST		*						*		*			*		*			*
INCREASED RISK OF FLOODING		*							*									
USE OF HERBICIDES/PESTICIDES/FERTILIZERS								*	*									
FURTHER DEGRADATION OF EXISTING FARMLAND		*						*	*	*					*			*
IMPACT ON TOURISM	*	*		*					*	*	*		*			*	*	*
WACAP MILL ALREADY AT MANJIMUP		*										*	*		*			*
PRACTICALITY/LOGISTICS OF REFORESTATION																		
EXPENSE - ADDITIONAL MAINTENANCE COSTS WILL OUTWEIGH ECONOMIC ADVANTAGE			*															
NO FIRM COMMITMENT MADE FOR REGENERATION OF NATIVE FOREST OR PLANTATION PLANTING		*						*	*		*		*			*		*
EXOTIC SHOULD NOT REPLACE INDIGENOUS		*						*	*				*		*		*	
NO EXPORT LICENSE SHOULD BE GRANTED												*	*	*		*	*	*
REGIONAL LAND USE STUDY SHOULD BE UNDERTAKEN AND GUIDELINES FOR LAND USE DRAFTED												*			*			
INDEPENDENT SURVEY BE UNDERTAKEN TO ASSESS FARMER INTEREST AND ATTITUDE TO PROPOSAL														*				
FURTHER ENVIRONMENTAL IMPACT STUDIES SHOULD BE UNDERTAKEN																		
ALREADY CLEARED/DEGRADED PASTURE LAND SHOULD BE PLANTED WITH TREES			*	*					*		*			*		*		
ONLY PLANTATION TIMBER SHOULD BE USED FOR WOODCHIPPING			*	*					*					*		*		
FARMERS SHOULD BE ENCOURAGED TO MAINTAIN, MANAGE AND REGENERATE NATIVE FOREST	*	*										*		*				
OTHER USES FOR TIMBER/LAND SHOULD BE CONSIDERED EG AGROFORESTRY, MIXED CROPS									*									
PAPER RECYCLING SHOULD BE ENCOURAGED																		
TOURIST POTENTIAL SHOULD BE INCREASED																		
SUBMISSION IN FAVOUR OF PROPOSAL						*	*											

	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378
DETRACT FROM PEACEFUL ENVIRONMENT/LIFESTYLE			*		*		*		*		*					*		*
INCREASED TRAFFIC/DAMAGE TO ROADS			*						*					*	*	*	*	*
PROXIMITY OF MILL SITE TO DENMARK									*					*				
SMOKE, NOISE AND VISUAL POLLUTION FROM INCREASED TRAFFIC AND MILL														*				
ADDITIONAL FINANCIAL INCENTIVE FOR FARMERS TO CLEAR					*			*	*				*		*			*
IMPACT ON LOCAL INDUSTRIES (SPOT MILLING, COTTAGE INDUSTRIES)/CREATE UNEMPLOYMENT		*	*					*	*	*			*		*		*	
UNSUSTAINABLE USE OF NATURAL RESOURCES	*	*	*		*					*	*		*		*		*	
MORAL AGRUMENT - OPPOSED TO WOODCHIPPING		*			*			*			*						*	
INSUFFICIENT RESEARCH ON ENVIRONMENTAL IMPACT (GENERAL)			*						*	*							*	
AMOUNT RESOURCES AVAILABLE OVERESTIMATED			*						*	*							*	*
WOODCHIPPING WASTEFUL OF FOREST RESOURCES		*			*		*	*		*	*		*		*	*		
DESTRUCTION OF INDIGENOUS FLORA (INCLUDING FOREST)		*	*		*	*	*	*	*	*	*		*		*	*	*	
IMPACT ON INDIGENOUS FAUNA		*				*		*	*							*	*	
LOSS OF GENETIC DIVERSITY																		
LOSS OF RARE/ENDEMIC/ENDANGERED SPECIES								*							*			
WATER QUALITY (SALINITY, TURBIDITY, EUTROPHICATION)		*	*			*		*	*	*			*	*	*		*	*
SOIL QUALITY (SALINISATION, EROSION, COMPACTION, LEACHING)		*			*										*			
EROSION (WIND, WATER)					*	*		*		*			*		*			
SPREAD OF JARRAH DIEBACK AND OTHER FOREST DISEASES		*	*				*	*	*	*							*	
INCREASED PRESSURE ON STATE FOREST			*		*	*			*	*								*
INCREASED RISK OF FLOODING																		
USE OF HERBICIDES/PESTICIDES/FERTILIZERS						*			*									
FURTHER DEGRADATION OF EXISTING FARMLAND		*	*			*	*		*	*							*	*
IMPACT ON TOURISM	*		*		*			*	*	*					*		*	*
WACAP MILL ALREADY AT MANJIMUP			*					*	*	*							*	
PRACTICALITY/LOGISTICS OF REFORESTATION																		
EXPENSE - ADDITIONAL MAINTENANCE COSTS WILL OUTWEIGH ECONOMIC ADVANTAGE																		*
NO FIRM COMMITMENT MADE FOR REGENERATION OF NATIVE FOREST OR PLANTATION PLANTING			*		*	*		*							*			
EXOTIC SHOULD NOT REPLACE INDIGENOUS			*		*										*			
NO EXPORT LICENSE SHOULD BE GRANTED		*	*		*	*			*	*								
REGIONAL LAND USE STUDY SHOULD BE UNDERTAKEN AND GUIDELINES FOR LAND USE DRAFTED		*							*									
INDEPENDENT SURVEY BE UNDERTAKEN TO ASSESS FARMER INTEREST AND ATTITUDE TO PROPOSAL			*						*									
FURTHER ENVIRONMENTAL IMPACT STUDIES SHOULD BE UNDERTAKEN																		
ALREADY CLEARED/DEGRADED PASTURE LAND SHOULD BE PLANTED WITH TREES			*							*			*				*	*
ONLY PLANTATION TIMBER SHOULD BE USED FOR WOODCHIPPING			*							*			*					
FARMERS SHOULD BE ENCOURAGED TO MAINTAIN, MANAGE AND REGENERATE NATIVE FOREST		*							*									
OTHER USES FOR TIMBER/LAND SHOULD BE CONSIDERED EG AGROFORESTRY, MIXED CROPS										*								
PAPER RECYCLING SHOULD BE ENCOURAGED																		
TOURIST POTENTIAL SHOULD BE INCREASED															*			*
SUBMISSION IN FAVOUR OF PROPOSAL				*								*						

	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396
DETRACT FROM PEACEFUL ENVIRONMENT/LIFESTYLE		*	*			*		*						*	*		*	
INCREASED TRAFFIC/DAMAGE TO ROADS	*		*			*								*	*		*	
PROXIMITY OF MILL SITE TO DENMARK															*			
SMOKE, NOISE AND VISUAL POLLUTION FROM INCREASED TRAFFIC AND MILL																		
ADDITIONAL FINANCIAL INCENTIVE FOR FARMERS TO CLEAR																		
IMPACT ON LOCAL INDUSTRIES (SPOT MILLING, COTTAGE INDUSTRIES)/CREATE UNEMPLOYMENT	*		*				*								*			
UNSUSTAINABLE USE OF NATURAL RESOURCES	*		*			*		*	*		*	*		*			*	*
MORAL AGRUMENT - OPPOSED TO WOODCHIPPING						*				*								
INSUFFICIENT RESEARCH ON ENVIRONMENTAL IMPACT (GENERAL)										*							*	*
AMOUNT RESOURCES AVAILABLE OVERESTIMATED								*									*	
WOODCHIPPING WASTEFUL OF FOREST RESOURCES	*	*	*	*					*	*				*				
DESTRUCTION OF INDIGENOUS FLORA (INCLUDING FOREST)	*	*	*	*			*	*	*		*	*		*	*	*	*	
IMPACT ON INDIGENOUS FAUNA			*	*				*	*		*				*		*	
LOSS OF GENETIC DIVERSITY											*						*	
LOSS OF RARE/ENDEMIC/ENDANGERED SPECIES									*		*			*			*	
WATER QUALITY (SALINITY, TURBIDITY, EUTROPHICATION)			*					*			*				*		*	
SOIL QUALITY (SALINISATION, EROSION, COMPACTION, LEACHING)								*									*	*
EROSION (WIND, WATER)											*							
SPREAD OF JARRAH DIEBACK AND OTHER FOREST DISEASES			*								*						*	
INCREASED PRESSURE ON STATE FOREST																		
INCREASED RISK OF FLOODING																		
USE OF HERBICIDES/PESTICIDES/FERTILIZERS																		
FURTHER DEGRADATION OF EXISTING FARMLAND																	*	*
IMPACT ON TOURISM			*			*	*		*					*	*		*	
WACAP MILL ALREADY AT MANJIMUP																	*	
PRACTICALITY/LOGISTICS OF REFORESTATION	*											*						
EXPENSE - ADDITIONAL MAINTENANCE COSTS WILL OUTWEIGH ECONOMIC ADVANTAGE																		
NO FIRM COMMITMENT MADE FOR REGENERATION OF NATIVE FOREST OR PLANTATION PLANTING								*							*		*	
EXOTIC SHOULD NOT REPLACE INDIGENOUS						*			*					*			*	
NO EXPORT LICENSE SHOULD BE GRANTED	*								*		*			*				
REGIONAL LAND USE STUDY SHOULD BE UNDERTAKEN AND GUIDELINES FOR LAND USE DRAFTED																		
INDEPENDENT SURVEY BE UNDERTAKEN TO ASSESS FARMER INTEREST AND ATTITUDE TO PROPOSAL																		
FURTHER ENVIRONMENTAL IMPACT STUDIES SHOULD BE UNDERTAKEN																		
ALREADY CLEARED/DEGRADED PASTURE LAND SHOULD BE PLANTED WITH TREES						*	*		*			*						*
ONLY PLANTATION TIMBER SHOULD BE USED FOR WOODCHIPPING	*		*	*								*						*
FARMERS SHOULD BE ENCOURAGED TO MAINTAIN, MANAGE AND REGENERATE NATIVE FOREST		*								*	*							
OTHER USES FOR TIMBER/LAND SHOULD BE CONSIDERED EG AGROFORESTRY, MIXED CROPS				*														
PAPER RECYCLING SHOULD BE ENCOURAGED																		
TOURIST POTENTIAL SHOULD BE INCREASED																		
SUBMISSION IN FAVOUR OF PROPOSAL					*								*					

	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414
DETRACT FROM PEACEFUL ENVIRONMENT/LIFESTYLE		*					*		*	*			*	*	*			*
INCREASED TRAFFIC/DAMAGE TO ROADS		*			*		*	*	*	*	*	*	*	*				
PROXIMITY OF MILL SITE TO DENMARK									*									
SMOKE, NOISE AND VISUAL POLLUTION FROM INCREASED TRAFFIC AND MILL		*																
ADDITIONAL FINANCIAL INCENTIVE FOR FARMERS TO CLEAR		*																
IMPACT ON LOCAL INDUSTRIES (SPOT MILLING, COTTAGE INDUSTRIES)/CREATE UNEMPLOYMENT		*		*	*			*	*	*				*	*			*
UNSUSTAINABLE USE OF NATURAL RESOURCES	*	*		*	*	*	*		*	*		*	*	*				
MORAL AGRUMENT - OPPOSED TO WOODCHIPPING														*	*			
INSUFFICIENT RESEARCH ON ENVIRONMENTAL IMPACT (GENERAL)			*		*		*			*		*	*	*	*			
AMOUNT RESOURCES AVAILABLE OVERESTIMATED												*						
WOODCHIPPING WASTEFUL OF FOREST RESOURCES	*	*		*		*	*		*		*			*				
DESTRUCTION OF INDIGENOUS FLORA (INCLUDING FOREST)	*	*	*		*	*	*	*	*		*	*	*	*	*			*
IMPACT ON INDIGENOUS FAUNA		*	*		*	*	*	*	*		*	*	*		*			
LOSS OF GENETIC DIVERSITY													*		*			
LOSS OF RARE/ENDEMIC/ENDANGERED SPECIES						*			*		*	*	*					
WATER QUALITY (SALINITY, TURBIDITY, EUTROPHICATION)		*	*		*	*	*	*	*		*	*			*			*
SOIL QUALITY (SALINISATION, EROSION, COMPACTION, LEACHING)		*		*				*							*			
EROSION (WIND, WATER)		*				*	*		*	*					*			
SPREAD OF JARRAH DIEBACK AND OTHER FOREST DISEASES			*		*	*		*	*									
INCREASED PRESSURE ON STATE FOREST						*			*			*		*				
INCREASED RISK OF FLOODING																		
USE OF HERBICIDES/PESTICIDES/FERTILIZERS																		
FURTHER DEGRADATION OF EXISTING FARMLAND	*	*	*					*				*	*					
IMPACT ON TOURISM		*			*	*		*	*	*	*		*		*			*
WACAP MILL ALREADY AT MANJIMUP		*			*	*			*									
PRACTICALITY/LOGISTICS OF REFORESTATION									*									
EXPENSE - ADDITIONAL MAINTENANCE COSTS WILL OUTWEIGH ECONOMIC ADVANTAGE																		
NO FIRM COMMITMENT MADE FOR REGENERATION OF NATIVE FOREST OR PLANTATION PLANTING		*						*							*			
EXOTIC SHOULD NOT REPLACE INDIGENOUS	*						*	*	*	*		*		*				
NO EXPORT LICENSE SHOULD BE GRANTED		*	*	*	*	*		*						*	*			
REGIONAL LAND USE STUDY SHOULD BE UNDERTAKEN AND GUIDELINES FOR LAND USE DRAFTED				*	*													
INDEPENDENT SURVEY BE UNDERTAKEN TO ASSESS FARMER INTEREST AND ATTITUDE TO PROPOSAL					*							*						
FURTHER ENVIRONMENTAL IMPACT STUDIES SHOULD BE UNDERTAKEN																		
ALREADY CLEARED/DEGRADED PASTURE LAND SHOULD BE PLANTED WITH TREES	*											*						
ONLY PLANTATION TIMBER SHOULD BE USED FOR WOODCHIPPING	*																	
FARMERS SHOULD BE ENCOURAGED TO MAINTAIN, MANAGE AND REGENERATE NATIVE FOREST	*				*	*			*			*			*			
OTHER USES FOR TIMBER/LAND SHOULD BE CONSIDERED EG AGROFORESTRY, MIXED CROPS			*			*			*						*			
PAPER RECYCLING SHOULD BE ENCOURAGED																		
TOURIST POTENTIAL SHOULD BE INCREASED																		
SUBMISSION IN FAVOUR OF PROPOSAL																*	*	

	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432
DETRACT FROM PEACEFUL ENVIRONMENT/LIFESTYLE	*		*		*			*		*	*		*		*		*	
INCREASED TRAFFIC/DAMAGE TO ROADS	*	*		*		*				*		*	*		*		*	
PROXIMITY OF MILL SITE TO DENMARK					*										*			
SMOKE, NOISE AND VISUAL POLLUTION FROM INCREASED TRAFFIC AND MILL					*									*	*			
ADDITIONAL FINANCIAL INCENTIVE FOR FARMERS TO CLEAR															*			*
IMPACT ON LOCAL INDUSTRIES (SPOT MILLING, COTTAGE INDUSTRIES)/CREATE UNEMPLOYMENT				*	*	*									*			*
UNSUSTAINABLE USE OF NATURAL RESOURCES	*					*	*		*	*				*	*	*		*
MORAL AGRUMENT - OPPOSED TO WOODCHIPPING									*	*	*			*	*			*
INSUFFICIENT RESEARCH ON ENVIRONMENTAL IMPACT (GENERAL)					*	*				*								
AMOUNT RESOURCES AVAILABLE OVERESTIMATED			*	*	*	*	*					*		*	*	*		
WOODCHIPPING WASTEFUL OF FOREST RESOURCES	*		*		*	*			*	*		*			*		*	*
DESTRUCTION OF INDIGENOUS FLORA (INCLUDING FOREST)			*	*	*	*		*	*	*		*	*	*	*	*		*
IMPACT ON INDIGENOUS FAUNA				*		*		*	*	*			*	*	*	*		*
LOSS OF GENETIC DIVERSITY								*										
LOSS OF RARE/ENDEMIC/ENDANGERED SPECIES								*	*					*	*		*	
WATER QUALITY (SALINITY, TURBIDITY, EUTROPHICATION)	*		*	*	*	*	*			*		*		*	*	*	*	*
SOIL QUALITY (SALINISATION, EROSION, COMPACTION, LEACHING)												*						
EROSION (WIND, WATER)	*																	
SPREAD OF JARRAH DIEBACK AND OTHER FOREST DISEASES				*		*												
INCREASED PRESSURE ON STATE FOREST				*					*				*					
INCREASED RISK OF FLOODING																		
USE OF HERBICIDES/PESTICIDES/FERTILIZERS																		
FURTHER DEGRADATION OF EXISTING FARMLAND			*		*						*				*			*
IMPACT ON TOURISM	*			*		*	*	*	*				*		*		*	*
WACAP MILL ALREADY AT MANJIMUP	*									*		*			*			
PRACTICALITY/LOGISTICS OF REFORESTATION						*												
EXPENSE - ADDITIONAL MAINTENANCE COSTS WILL OUTWEIGH ECONOMIC ADVANTAGE			*												*			*
NO FIRM COMMITMENT MADE FOR REGENERATION OF NATIVE FOREST OR PLANTATION PLANTING	*			*		*									*			*
EXOTIC SHOULD NOT REPLACE INDIGENOUS			*		*	*				*					*		*	
NO EXPORT LICENSE SHOULD BE GRANTED	*	*		*	*	*	*	*				*	*			*		
REGIONAL LAND USE STUDY SHOULD BE UNDERTAKEN AND GUIDELINES FOR LAND USE DRAFTED				*			*					*				*		
INDEPENDENT SURVEY BE UNDERTAKEN TO ASSESS FARMER INTEREST AND ATTITUDE TO PROPOSAL																*		
FURTHER ENVIRONMENTAL IMPACT STUDIES SHOULD BE UNDERTAKEN																		
ALREADY CLEARED/DEGRADED PASTURE LAND SHOULD BE PLANTED WITH TREES					*	*				*		*			*			
ONLY PLANTATION TIMBER SHOULD BE USED FOR WOODCHIPPING	*				*	*		*	*	*							*	
FARMERS SHOULD BE ENCOURAGED TO MAINTAIN, MANAGE AND REGENERATE NATIVE FOREST							*						*			*		
OTHER USES FOR TIMBER/LAND SHOULD BE CONSIDERED EG AGROFORESTRY, MIXED CROPS															*			
PAPER RECYCLING SHOULD BE ENCOURAGED																		
TOURIST POTENTIAL SHOULD BE INCREASED								*										
SUBMISSION IN FAVOUR OF PROPOSAL																		

	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450
DETRACT FROM PEACEFUL ENVIRONMENT/LIFESTYLE		*								*					*			
INCREASED TRAFFIC/DAMAGE TO ROADS	*	*				*				*			*		*			
PROXIMITY OF MILL SITE TO DENMARK	*									*								
SMOKE, NOISE AND VISUAL POLLUTION FROM INCREASED TRAFFIC AND MILL	*									*			*					
ADDITIONAL FINANCIAL INCENTIVE FOR FARMERS TO CLEAR	*										*			*	*			
IMPACT ON LOCAL INDUSTRIES (SPOT MILLING, COTTAGE INDUSTRIES)/CREATE UNEMPLOYMENT						*				*	*			*	*	*		
UNSUSTAINABLE USE OF NATURAL RESOURCES	*				*		*		*	*			*	*	*			
MORAL AGRUMENT - OPPOSED TO WOODCHIPPING					*		*		*		*		*		*	*	*	
INSUFFICIENT RESEARCH ON ENVIRONMENTAL IMPACT (GENERAL)	*					*				*				*			*	
AMOUNT RESOURCES AVAILABLE OVERESTIMATED	*									*	*			*	*			
WOODCHIPPING WASTEFUL OF FOREST RESOURCES			*		*		*				*		*		*	*		
DESTRUCTION OF INDIGENOUS FLORA (INCLUDING FOREST)				*		*				*	*	*	*	*	*	*	*	
IMPACT ON INDIGENOUS FAUNA				*		*				*			*		*		*	
LOSS OF GENETIC DIVERSITY															*			
LOSS OF RARE/ENDEMIC/ENDANGERED SPECIES						*				*			*		*			
WATER QUALITY (SALINITY, TURBIDITY, EUTROPHICATION)	*				*	*				*			*	*	*			
SOIL QUALITY (SALINISATION, EROSION, COMPACTION, LEACHING)	*					*				*		*		*	*			
EROSION (WIND, WATER)										*		*			*			
SPREAD OF JARRAH DIEBACK AND OTHER FOREST DISEASES				*	*					*	*		*				*	
INCREASED PRESSURE ON STATE FOREST										*				*	*			
INCREASED RISK OF FLOODING																		
USE OF HERBICIDES/PESTICIDES/FERTILIZERS													*		*			
FURTHER DEGRADATION OF EXISTING FARMLAND					*	*				*				*	*			
IMPACT ON TOURISM						*				*	*			*	*	*	*	
WACAP MILL ALREADY AT MANJIMUP										*	*			*	*			
PRACTICALITY/LOGISTICS OF REFORESTATION				*						*	*				*			
EXPENSE - ADDITIONAL MAINTENANCE COSTS WILL OUTWEIGH ECONOMIC ADVANTAGE															*			
NO FIRM COMMITMENT MADE FOR REGENERATION OF NATIVE FOREST OR PLANTATION PLANTING	*					*				*	*		*	*	*			
EXOTIC SHOULD NOT REPLACE INDIGENOUS	*									*			*	*	*			
NO EXPORT LICENSE SHOULD BE GRANTED	*			*					*	*	*			*	*	*		*
REGIONAL LAND USE STUDY SHOULD BE UNDERTAKEN AND GUIDELINES FOR LAND USE DRAFTED	*									*	*			*				*
INDEPENDENT SURVEY BE UNDERTAKEN TO ASSESS FARMER INTEREST AND ATTITUDE TO PROPOSAL										*	*			*				*
FURTHER ENVIRONMENTAL IMPACT STUDIES SHOULD BE UNDERTAKEN										*								
ALREADY CLEARED/DEGRADED PASTURE LAND SHOULD BE PLANTED WITH TREES	*		*			*						*		*				
ONLY PLANTATION TIMBER SHOULD BE USED FOR WOODCHIPPING												*						
FARMERS SHOULD BE ENCOURAGED TO MAINTAIN, MANAGE AND REGENERATE NATIVE FOREST				*							*							*
OTHER USES FOR TIMBER/LAND SHOULD BE CONSIDERED EG AGROFORESTRY, MIXED CROPS											*				*			
PAPER RECYCLING SHOULD BE ENCOURAGED																		
TOURIST POTENTIAL SHOULD BE INCREASED																		
SUBMISSION IN FAVOUR OF PROPOSAL			*					*										

	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468
DETRACT FROM PEACEFUL ENVIRONMENT/LIFESTYLE	*													*				*
INCREASED TRAFFIC/DAMAGE TO ROADS	*	*						*						*	*			
PROXIMITY OF MILL SITE TO DENMARK														*				
SMOKE, NOISE AND VISUAL POLLUTION FROM INCREASED TRAFFIC AND MILL														*				
ADDITIONAL FINANCIAL INCENTIVE FOR FARMERS TO CLEAR														*	*			
IMPACT ON LOCAL INDUSTRIES (SPOT MILLING, COTTAGE INDUSTRIES)/CREATE UNEMPLOYMENT	*	*	*				*	*				*		*	*			
UNSUSTAINABLE USE OF NATURAL RESOURCES	*	*			*			*				*		*				
MORAL AGRUMENT - OPPOSED TO WOODCHIPPING					*		*	*		*	*	*						
INSUFFICIENT RESEARCH ON ENVIRONMENTAL IMPACT (GENERAL)				*						*			*		*		*	
AMOUNT RESOURCES AVAILABLE OVERESTIMATED		*					*							*	*		*	
WOODCHIPPING WASTEFUL OF FOREST RESOURCES	*	*			*		*			*	*	*		*	*			*
DESTRUCTION OF INDIGENOUS FLORA (INCLUDING FOREST)	*	*	*		*		*	*	*	*	*	*	*	*	*	*	*	*
IMPACT ON INDIGENOUS FAUNA	*	*	*				*	*	*	*		*	*	*	*		*	*
LOSS OF GENETIC DIVERSITY														*	*			*
LOSS OF RARE/ENDEMIC/ENDANGERED SPECIES															*			
WATER QUALITY (SALINITY, TURBIDITY, EUTROPHICATION)							*						*	*				
SOIL QUALITY (SALINISATION, EROSION, COMPACTION, LEACHING)														*				
EROSION (WIND, WATER)			*											*				
SPREAD OF JARRAH DIEBACK AND OTHER FOREST DISEASES		*	*							*		*	*				*	
INCREASED PRESSURE ON STATE FOREST		*											*	*				
INCREASED RISK OF FLOODING																		
USE OF HERBICIDES/PESTICIDES/FERTILIZERS																		
FURTHER DEGRADATION OF EXISTING FARMLAND														*				*
IMPACT ON TOURISM	*	*						*	*			*		*	*		*	
WACAP MILL ALREADY AT MANJIMUP	*													*	*			
PRACTICALITY/LOGISTICS OF REFORESTATION														*				
EXPENSE - ADDITIONAL MAINTENANCE COSTS WILL OUTWEIGH ECONOMIC ADVANTAGE														*				
NO FIRM COMMITMENT MADE FOR REGENERATION OF NATIVE FOREST OR PLANTATION PLANTING		*					*							*	*			
EXOTIC SHOULD NOT REPLACE INDIGENOUS		*	*									*						
NO EXPORT LICENSE SHOULD BE GRANTED		*	*		*	*		*				*		*	*	*	*	*
REGIONAL LAND USE STUDY SHOULD BE UNDERTAKEN AND GUIDELINES FOR LAND USE DRAFTED	*	*	*	*	*					*	*			*	*		*	
INDEPENDENT SURVEY BE UNDERTAKEN TO ASSESS FARMER INTEREST AND ATTITUDE TO PROPOSAL		*			*					*				*			*	
FURTHER ENVIRONMENTAL IMPACT STUDIES SHOULD BE UNDERTAKEN																		
ALREADY CLEARED/DEGRADED PASTURE LAND SHOULD BE PLANTED WITH TREES									*									
ONLY PLANTATION TIMBER SHOULD BE USED FOR WOODCHIPPING																		
FARMERS SHOULD BE ENCOURAGED TO MAINTAIN, MANAGE AND REGENERATE NATIVE FOREST		*			*					*	*				*		*	
OTHER USES FOR TIMBER/LAND SHOULD BE CONSIDERED EG AGROFORESTRY, MIXED CROPS	*	*					*				*			*			*	
PAPER RECYCLING SHOULD BE ENCOURAGED																		
TOURIST POTENTIAL SHOULD BE INCREASED	*										*	*		*				
SUBMISSION IN FAVOUR OF PROPOSAL																		

	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486
DETRACT FROM PEACEFUL ENVIRONMENT/LIFESTYLE		*			*		*	*			*							
INCREASED TRAFFIC/DAMAGE TO ROADS	*				*	*		*				*			*			
PROXIMITY OF MILL SITE TO DENMARK																		
SMOKE, NOISE AND VISUAL POLLUTION FROM INCREASED TRAFFIC AND MILL											*							
ADDITIONAL FINANCIAL INCENTIVE FOR FARMERS TO CLEAR									*									
IMPACT ON LOCAL INDUSTRIES (SPOT MILLING, COTTAGE INDUSTRIES)/CREATE UNEMPLOYMENT	*		*		*			*			*			*				
UNSUSTAINABLE USE OF NATURAL RESOURCES							*				*	*		*				
MORAL AGRUMENT - OPPOSED TO WOODCHIPPING		*									*	*						
INSUFFICIENT RESEARCH ON ENVIRONMENTAL IMPACT (GENERAL)						*				*								
AMOUNT RESOURCES AVAILABLE OVERESTIMATED			*		*	*	*											
WOODCHIPPING WASTEFUL OF FOREST RESOURCES					*		*				*	*		*		*		
DESTRUCTION OF INDIGENOUS FLORA (INCLUDING FOREST)	*	*			*	*	*				*			*		*	*	
IMPACT ON INDIGENOUS FAUNA	*	*			*	*	*			*	*			*				
LOSS OF GENETIC DIVERSITY																		
LOSS OF RARE/ENDEMIC/ENDANGERED SPECIES		*				*	*											
WATER QUALITY (SALINITY, TURBIDITY, EUTROPHICATION)	*						*		*		*			*	*		*	
SOIL QUALITY (SALINISATION, EROSION, COMPACTION, LEACHING)							*		*									
EROSION (WIND, WATER)							*											
SPREAD OF JARRAH DIEBACK AND OTHER FOREST DISEASES	*				*						*							
INCREASED PRESSURE ON STATE FOREST						*			*									
INCREASED RISK OF FLOODING																		
USE OF HERBICIDES/PESTICIDES/FERTILIZERS																		
FURTHER DEGRADATION OF EXISTING FARMLAND	*						*					*						
IMPACT ON TOURISM	*				*		*	*			*			*				
WACAP MILL ALREADY AT MANJIMUP																		
PRACTICALITY/LOGISTICS OF REFORESTATION									*						*			
EXPENSE - ADDITIONAL MAINTENANCE COSTS WILL OUTWEIGH ECONOMIC ADVANTAGE						*												
NO FIRM COMMITMENT MADE FOR REGENERATION OF NATIVE FOREST OR PLANTATION PLANTING		*				*			*						*			
EXOTIC SHOULD NOT REPLACE INDIGENOUS							*		*			*						
NO EXPORT LICENSE SHOULD BE GRANTED		*	*		*								*	*		*		*
REGIONAL LAND USE STUDY SHOULD BE UNDERTAKEN AND GUIDELINES FOR LAND USE DRAFTED					*													
INDEPENDENT SURVEY BE UNDERTAKEN TO ASSESS FARMER INTEREST AND ATTITUDE TO PROPOSAL									*									
FURTHER ENVIRONMENTAL IMPACT STUDIES SHOULD BE UNDERTAKEN																		
ALREADY CLEARED/DEGRADED PASTURE LAND SHOULD BE PLANTED WITH TREES							*		*			*						
ONLY PLANTATION TIMBER SHOULD BE USED FOR WOODCHIPPING												*						
FARMERS SHOULD BE ENCOURAGED TO MAINTAIN, MANAGE AND REGENERATE NATIVE FOREST					*												*	
OTHER USES FOR TIMBER/LAND SHOULD BE CONSIDERED EG AGROFORESTRY, MIXED CROPS		*			*													
PAPER RECYCLING SHOULD BE ENCOURAGED																		
TOURIST POTENTIAL SHOULD BE INCREASED							*	*										
SUBMISSION IN FAVOUR OF PROPOSAL										*								

	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504
DETRACT FROM PEACEFUL ENVIRONMENT/LIFESTYLE							*					*		*				
INCREASED TRAFFIC/DAMAGE TO ROADS						*	*					*						
PROXIMITY OF MILL SITE TO DENMARK							*											
SMOKE, NOISE AND VISUAL POLLUTION FROM INCREASED TRAFFIC AND MILL							*											
ADDITIONAL FINANCIAL INCENTIVE FOR FARMERS TO CLEAR							*							*				
IMPACT ON LOCAL INDUSTRIES (SPOT MILLING, COTTAGE INDUSTRIES)/CREATE UNEMPLOYMENT							*				*	*					*	
UNSUSTAINABLE USE OF NATURAL RESOURCES							*	*		*		*						
MORAL AGRUMENT - OPPOSED TO WOODCHIPPING										*		*						
INSUFFICIENT RESEARCH ON ENVIRONMENTAL IMPACT (GENERAL)							*						*					
AMOUNT RESOURCES AVAILABLE OVERESTIMATED							*					*					*	
WOODCHIPPING WASTEFUL OF FOREST RESOURCES		*	*	*	*	*	*	*		*	*	*						
DESTRUCTION OF INDIGENOUS FLORA (INCLUDING FOREST)	*	*	*	*	*	*	*	*			*	*		*		*	*	*
IMPACT ON INDIGENOUS FAUNA							*	*			*	*		*		*	*	
LOSS OF GENETIC DIVERSITY							*					*						
LOSS OF RARE/ENDEMIC/ENDANGERED SPECIES												*		*		*		
WATER QUALITY (SALINITY, TURBIDITY, EUTROPHICATION)	*						*	*			*	*				*		
SOIL QUALITY (SALINISATION, EROSION, COMPACTION, LEACHING)							*	*						*				
EROSION (WIND, WATER)							*	*				*						
SPREAD OF JARRAH DIEBACK AND OTHER FOREST DISEASES												*						
INCREASED PRESSURE ON STATE FOREST							*											
INCREASED RISK OF FLOODING																		
USE OF HERBICIDES/PESTICIDES/FERTILIZERS																		
FURTHER DEGRADATION OF EXISTING FARMLAND	*						*				*	*		*				
IMPACT ON TOURISM	*	*				*	*				*	*		*			*	
WACAP MILL ALREADY AT MANJIMUP					*		*			*		*						
PRACTICALITY/LOGISTICS OF REFORESTATION							*							*				
EXPENSE - ADDITIONAL MAINTENANCE COSTS WILL OUTWEIGH ECONOMIC ADVANTAGE							*											
NO FIRM COMMITMENT MADE FOR REGENERATION OF NATIVE FOREST OR PLANTATION PLANTING			*				*							*				
EXOTIC SHOULD NOT REPLACE INDIGENOUS												*						
NO EXPORT LICENSE SHOULD BE GRANTED				*			*				*				*			
REGIONAL LAND USE STUDY SHOULD BE UNDERTAKEN AND GUIDELINES FOR LAND USE DRAFTED							*			*					*			
INDEPENDENT SURVEY BE UNDERTAKEN TO ASSESS FARMER INTEREST AND ATTITUDE TO PROPOSAL							*											
FURTHER ENVIRONMENTAL IMPACT STUDIES SHOULD BE UNDERTAKEN																		
ALREADY CLEARED/DEGRADED PASTURE LAND SHOULD BE PLANTED WITH TREES			*									*						
ONLY PLANTATION TIMBER SHOULD BE USED FOR WOODCHIPPING																		
FARMERS SHOULD BE ENCOURAGED TO MAINTAIN, MANAGE AND REGENERATE NATIVE FOREST																		
OTHER USES FOR TIMBER/LAND SHOULD BE CONSIDERED EG AGROFORESTRY, MIXED CROPS							*											
PAPER RECYCLING SHOULD BE ENCOURAGED																		
TOURIST POTENTIAL SHOULD BE INCREASED							*											
SUBMISSION IN FAVOUR OF PROPOSAL									*									

	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522
DETRACT FROM PEACEFUL ENVIRONMENT/LIFESTYLE				*		*	*	*			*		*					
INCREASED TRAFFIC/DAMAGE TO ROADS	*		*	*	*	*	*						*	*				
PROXIMITY OF MILL SITE TO DENMARK						*							*					
SMOKE, NOISE AND VISUAL POLLUTION FROM INCREASED TRAFFIC AND MILL						*							*					
ADDITIONAL FINANCIAL INCENTIVE FOR FARMERS TO CLEAR								*										
IMPACT ON LOCAL INDUSTRIES (SPOT MILLING, COTTAGE INDUSTRIES)/CREATE UNEMPLOYMENT	*	*	*		*	*								*				
UNSUSTAINABLE USE OF NATURAL RESOURCES					*				*				*		*			*
MORAL AGRUMENT - OPPOSED TO WOODCHIPPING							*	*			*	*	*		*	*	*	
INSUFFICIENT RESEARCH ON ENVIRONMENTAL IMPACT (GENERAL)					*								*					
AMOUNT RESOURCES AVAILABLE OVERESTIMATED					*								*					
WOODCHIPPING WASTEFUL OF FOREST RESOURCES			*					*	*	*	*			*	*	*	*	
DESTRUCTION OF INDIGENOUS FLORA (INCLUDING FOREST)		*	*	*	*		*	*	*	*			*	*		*		*
IMPACT ON INDIGENOUS FAUNA		*	*	*			*	*					*	*				
LOSS OF GENETIC DIVERSITY			*															
LOSS OF RARE/ENDEMIC/ENDANGERED SPECIES		*						*										
WATER QUALITY (SALINITY, TURBIDITY, EUTROPHICATION)		*	*	*		*	*	*						*				
SOIL QUALITY (SALINISATION, EROSION, COMPACTION, LEACHING)			*	*				*						*				
EROSION (WIND, WATER)	*		*					*						*				
SPREAD OF JARRAH DIEBACK AND OTHER FOREST DISEASES			*										*	*				
INCREASED PRESSURE ON STATE FOREST					*			*					*					
INCREASED RISK OF FLOODING																		
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FURTHER DEGRADATION OF EXISTING FARMLAND	*		*	*				*									*	
IMPACT ON TOURISM		*	*	*	*	*	*	*			*		*	*				*
WACAP MILL ALREADY AT MANJIMUP													*	*				
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SUBMISSION IN FAVOUR OF PROPOSAL																		

	523	524	525	526	527	528	529											
DETRACT FROM PEACEFUL ENVIRONMENT/LIFESTYLE							*											
INCREASED TRAFFIC/DAMAGE TO ROADS	*						*											
PROXIMITY OF MILL SITE TO DENMARK																		
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UNSUSTAINABLE USE OF NATURAL RESOURCES		*																
MORAL AGRUMENT - OPPOSED TO WOODCHIPPING																		
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WOODCHIPPING WASTEFUL OF FOREST RESOURCES					*	*												
DESTRUCTION OF INDIGENOUS FLORA (INCLUDING FOREST)	*	*		*	*	*	*											
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PAPER RECYCLING SHOULD BE ENCOURAGED																		
TOURIST POTENTIAL SHOULD BE INCREASED		*				*												
SUBMISSION IN FAVOUR OF PROPOSAL																		

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Mr M Polis
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Ms M Cohen
MARGARET RIVER WA

Mr O Martinson
ALBANY WA

Ms E M Weller
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BICTON W A

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Dr and Mrs J J Rippey
NEDLANDS W A

Mr & Mrs G J & R P Hughes
DENMARK W A

Albany Port Authority
ALBANY W A

Shire of Manjimup
MANJIMUP W A

Shire of Denmark
DENMARK W A

Shire of Albany
ALBANY W A

Town of Albany
ALBANY W A

Department of Tourism

Fisheries Department

Main Roads Department

Western Australian Museum

Department of Conservation
and Land Management

State Energy Commission

State Planning Commission

Department of Agriculture

Great Southern Development
Authority

WA Bushfires Board

Department of Mines

Department of Occupational
Health Safety and Welfare

Department of Industrial
Development

WA Water Authority

APPENDIX B

Western Australian
Department of Agriculture
BARON-HAY COURT,
South Perth 6151.
Western Australia.
Telephone (09) 368 3333. Telegrams AGDEP Perth. Telex AA 93304
Please address all letters to the Director of Agriculture, quoting our reference number to your correspondence.

Your Ref: 6/81
Our Ref: 762/86
Enquiries: Mr G. Beeston
Date: June 26, 1987
CAC

Mr B. Carbon
Chairman
Environment Protection Authority

McLEANS FOREST PROJECT (ERMP/DRAFT E.I.S.)

Further to our letter of March 31, 1987 please find enclosed the final report on the areas of private land covered by native vegetation.

The figures covered by this report update earlier figures and have been prepared after consultation with the McLean Project Consultant. All areas assessed by his report have now been mapped and included in the Department's report that is attached.

(N.J. Halse)
DIRECTOR OF AGRICULTURE

Atts.

REPORT ON UNCLEARED PRIVATE LAND IN THE Mc LEANS PROJECT AREA

G.R. BEESTON

G. MLODAWSKI

W.A. DEPARTMENT OF AGRICULTURE

DIVISION OF RESOURCE MANAGEMENT

INTRODUCTION

To aid its assessment of the McLeans Forest Project Environmental Review and Management Programme, the Environmental Protection Authority requested that the Department of Agriculture:

a) Provide an estimate of the area of native vegetation remaining on private land

b) Provide an estimate of the proportion of this native vegetation which would be suitable for use in the proposed project.

METHODS

The remaining native vegetation on private property in the project area was mapped at a scale of 1:100,000. In the area covered by the Mt Barker 1:250,000 map sheet, the 1:50,000 aerial photography flown in December 1985 was used as the source material. For those areas falling on the Permberton 1:250,000 map sheet rectified Landsat Images at a scale of 1:100,000 were used. The dates of flying of these scenes fill in the 1984 - 1985 time period.

The data from these photographs and images was then digitized using the Intergraph Graphics Design Software (GDS) on the Land Data Centre Vax 11/785 Computer System. The digitized line work was then corrected and made into complex shapes (polygons) using the Graphics Polygon Processing Utility Software (G.P.P.U.).

These polygons then had a Data Management and Retrieval System (DMRS) data base attached to them to allow the loading of attributes. These attributes were:

Polygon Identification Number
Land System as defind by ERMP
Map unit (McArthur et al, Smith)
Area
Perimeter

The map unit attribute was taken from the McArthur et al publication "Landform and Soils of the south coast and hinterland, W.A. Northcliffe to Many Peaks". In the Rocky Gully area the units of Smith's vegetation map of Pemberton were used. The Manjimup area was not covered by these reports and was not classified and has been shown in the results as being totally available for the project.

The attributes of area and perimeter were calculated and loaded automatically using the Area Utility of G.P.P.U.. Reports on the type and area of vegetation in each land system were then generated from the data base.

RESULTS

The description given in McArthur et al and Smith's publication enabled a list of those units with suitable timber species for the project to be drawn up. Table 1 contains this list of units and the area of each in the Land Systems defined by the E.R.M.P.

.../2.

In Table 2 a list of those units not considered to contain suitable resources is shown. Both Table 1 and Table 2 refer to the legend contained in Appendix 1.

Table 3 shows the size distribution of the uncleared private land blocks.

The attached map shows the location of the uncleared native vegetation on private land and its relationship to the land systems defined in the McLeans Report.

CONCLUSIONS

The results of the study show that in the project area the total area of uncleared private land which may contain resource suitable for the project is 43,083 ha. However this does not take into account the fact that the Manjimup Area figures (11,814 ha) have not been classified into land types and thus some areas will not be suitable.

The total area given above will also be reduced as the Land Clearing Regulations of the Soil and Land Conservation Act would stop clearing where land degradation hazard was likely to occur.

The distribution and size of the uncleared native vegetation as illustrated in Table 3 and the attached map shows that the majority of blocks are small, scattered and confined to wind breaks, shade clumps or water course areas.

In addition when maps of the uncleared vegetation areas defined in this study are overlaid on the 1:100,000 maps, which were compiled from the 1974 aerial photography the fact emerges that extensive clearing has taken place in these eleven years. In some areas less than one quarter of the vegetation present in 1974 now remains.

Table 1

POTENTIALLY AVAILABLE RESOURCE

	ALBANY	MT BARKER	ROCKY-GULLY	KALGAN	KING	PORONGORUP	DENMARK	QUINQUP KENT	FRANK-LAND	NORTHCLIFFE	MANJIMUP
BAf		816		18		983					
BEy	129.73	1549	1090			40					
CA			319								
COb								31	7	409	
CM			282								
COp								8			
COd										874	
Coy	77.27							33	117	1302	
CRy										238.99	
CRb										1815	
Kb	247.11						768.7		1859		
Kp									32		
Ky	144.75						61.1		1245		
MI	167.83	34.6									
MTb									269		
MTy	28.8								16		
PP	41.4	184.2									
R	1248.6			19	32						
S1							84.2	116	132	118	
S2		153.22	172								
S3										140	
S8	33.9										
TR	1205						27.8	257	38		
V2	179.4	103							119	487	
V3	39.4								152	196	
V6		574.6									
V7	71.9			553							
Y	1870	432.82				61					
JARRAH (SMITH)			7389								
TOTAL	5512	3847	9252	590	32	1084	942	445	3986	5579	11814

Table 2

List of Units not considered Resource

A	OW
BAg	PN
BO	Q
BWp	QN
CH	S4
Dc	S5
Ds	S6
F	S7
Gg	S9
MO	TK
MTp	V4

Table 3

Size Distribution of Potential Resource Blocks

Size(ha)	0-10	11-50	51-100	101-500	>500
Number.	393	393	86	90	10

APPENDIX 1

MAP LEGEND FROM

McARTHUR et al.

PLATEAU ELEMENTS

Bevan. Gently undulating terrain; includes minor valleys.

BEy Gravelly or sandy yellow duplex soils; J-M forest.
BEb Brown gravelly duplex soils and red earths; M-K forest.

Perillup. Plains often slightly lower than Bevan, some swamps.

Yellow duplex soils on long slopes; J-M forest.
Podzols on drainage floors; Mel, low woodland.
Yellow solonetzic soils in swamps; Ys thickets.

Crowea. Crests and upper slopes of spurs and ridges.

CRb Brown gravelly duplex soils and red earths; K-M forest.
CRy Gravelly yellow duplex soils; J-M forest.
CRd Sandy yellow duplex soils; M-J forest.

HILLS AND HILLY TERRAIN

Keystone. Hills and ridges; >60m relief; smooth crests and slopes; occasional ravines; some prominent granite domes.

Kg Granite outcrop.
Kb Brown gravelly duplex soils and red or yellow earths; much laterite. M-K-Tr-Ty forest.
Ky Gravelly yellow duplex soils; J-M-Ty forest.
Kp Shallow gritty yellow duplex soils; J-Bu woodland.
Ks Podzols; Tt heath and J woodland.

Lindesay. Hills; >60 m relief, rocky crests; smooth flanks.

Lg Granite outcrop.
Lp Shallow gritty yellow duplex soils; J-Bu woodland.
Ly Gravelly yellow duplex soils with laterite; J-M forest.
Ls Leached sands and podzols; Tt heath and J woodland.

Gardner. Coastal hills and headlands; >60m relief; steep irregular rocky crests and upper slopes separated by smooth sandy tracts.

Gg Granite outcrop.
Gs Leached sands and podzols; mallee-heath.

Barrow. Hills and ridges. >60m relief; crests of granite; gently sloping flanks.

BAg Granite outcrop.
BAf Yellow duplex soils, sands, gravels; J-M-Y forest.

Mattsband. Hills and hilly terrain; 20-60 m relief; scattered granite.

MTy Gravelly yellow and yellow duplex soils; J-M-Ty forest.
MTb Brown gravelly duplex soils; K-M-Ty-J forest.
MTp Shallow gritty yellow duplex soils; J. woodland.
MTd Sandy yellow duplex soils; J-M forest.

Pilleanup. Hills of granite with a fringe of sedimentary rocks; <60m relief; rounded crests and smooth gentle slopes; some granite.

Gravelly yellow duplex soils, sands and laterite; J-M-Y low forest

Collis. Low hills and low hilly terrain; 20 m relief.

COy Gravelly yellow duplex soils; J-M forest.
COb Brown gravelly duplex soils; M-J-K forest.
COp Shallow gritty yellow duplex soils; J-Bu woodland.
COd Sandy yellow duplex soils; M-J forest.

SWAMPY TERRAIN

Cambellup. Plains with drainage floors, swamps and low rises.

Yellow solonetzic soils and podzols on floors; Bb-Ys-Y thickets; Mel woodland
Shallow solonetzic soils in swamps; myrtaceous heath.
Gravelly yellow duplex soils on rises; M forest; Ha scrub.

Sidcup. Shallow narrow depressions.

Humus podzols; Mel woodland.

Caldyanup. Plains with drainage floors and low rises.

Yellow solonetzic soils; Ha scrub, Mel woodland.
Humus podzols; Kg sedgelands, Tt heath. Reddish yellow earths; Ha scrub
Gravelly yellow duplex soils on rises; M forest, Ha scrub.

Pingerup. Plains with drainage floors; scattered granite.

Humus peaty podzols; Kg sedgeland; Tt heath.
Peat in swamps; Wt thickets.

Burnett. Plains with drainage floors; scattered granite.

Podzols and shallow gritty soils. Kg sedgelands, Tt heath.

Morande. Lunettes, dunes, hummocks, and intervening swamps.

Podzols in sands; B-Sh woodland.
Yellow solonetzic soils in swamps; Ha scrub, Ys thickets.

Quagering. Broadly convex sandy crests and valley divides; occasional swamps

Humus and peaty podzols; Kg sedgelands, Tt heath.

Angove. Gently sloping sandy terrain; slight dissections.

Humus podzols on broad crests; Kg sedgeland, Tt heath.
Sandy yellow duplex soils in shallow dissections; J woodland.

Hazelvale. Narrow sandy plains; slight stream incision.

Humus podzols on crests of spurs; Tt scrub
Yellow duplex soils on valley flanks; J-M low forest
Peaty podzols on minor valley floors, sedges and reeds

UNITS DEVELOPED IN SILTSTONES AND SANDSTONES

PLATEAU ELEMENTS

Redmond. Broadly undulating plateau; scattered lakes and depressions.

R — Yellow duplex soils and laterite on plains. M-J-Ab forest.
Yellow solonetzic soils in depressions; Mel woodland.

Takalarup. Broadly undulating plateau; lakes; depressions; hummocks; scattered siltstone.

TK — Gravelly yellow duplex soils on plains; J-M woodland, mallee heath.
Yellow solonetzic soils in depressions; Ys-Mel thickets.
Podzols in sands of hummocks; B woodland.

Chillinup. Broadly undulating plateau; scattered small lakes and depressions with lunettes; many sandy hummocks and linear dunes.

CH — Yellow duplex soils, laterite on plains; mallee heath.
Yellow solonetzic soils in depressions; Ys-Mel thickets.
Podzols in sands of hummocks and dunes; B woodland.

Yellanup. Gently sloping terrain fringing higher hills and ridges.

Gravelly yellow duplex soils; J-M forest; mallee heath.

Dempster. Ridge crests formed by dissection of plateau units.

Dc — Sands and laterite on elongate crests; J-Ab-M forest.
Ds — Sands and gravels on smooth slopes; Ab-Sh low forest.

Mitchell. Broadly undulating uplands.

MI — Gravelly yellow duplex soils and laterite on crests; J-M forest.
Leached sands in depressions; J-Sh woodland.

Trent. Flat topped hills; <40 m relief; gently sloping flanks.

Gravelly yellow duplex soils and laterite on crests; J-M forest.
Leached sands with iron pan on flanks; J-Sh woodland.

SWAMPY TERRAIN

Boulongup. Broad, shallow, poorly drained depressions in plateau surface; complex of swamps, lakes, low lateritic rises, lunettes and hummocks.

Yellow solonetzic soils in swamps; Ys-Mel thickets, reeds.
Podzols in sands; J-B-Sh woodland.

Fernley. Gently undulating sandy terrain.

Sandy or gravelly yellow duplex soils on rises; J-Bu woodland.
Humus podzols in broad depressions; Kg sedgeland; Tt heath.

UNITS DEVELOPED IN COASTAL AEOLIAN AND FLUVIATILE SEDIMENTS

SWAMPY TERRAIN

Walpole. Flat to gently sloping benches; some shallow dissections.

Podzols and deep sands; Tt scrub, Sh woodland and Kg sedgeland.

Blackwater. Plains with hummocks, linear dunes, and swamps.

BW

BWp — Humus podzols on plains; Kg sedgelands, Tt heath.
Peat in swamps; Wt thickets.
Podzols on dunes; B woodland.

BWo — Shallow gleyed duplex soils; Mel woodland.
Podzols on dunes; B-Sh woodland.

Owingup. Plains with swamps, lunettes and dunes.

Yellow solonetzic soils, organic loams and diatomaceous earths; Wt-Mel thickets, Tt heath and reeds. Podzols on dunes; B-Sh woodland

Kordabup. Broad drainage floors in lower reaches of streams.

KO — Humus podzols; Tt scrub and Kg sedgeland.

DUNE SYSTEMS

d'Entrecasteaux. Broad ridges of limestone, often >100 m relief; undulating crests; steep scarps to seaward; much limestone outcrop.

E — Podzols and shallow brown sands; Pp-B scrub.

Meerup. Parabolic dunes.

M

My — Calcareous sand; Pp heath and woodland.
Mc — Calcareous sand with shallow leaching; Pp woodland.
Mp — Podzols over calcareous sand; B-Bu-Y woodland.
Ms — Podzols in siliceous sand; B-Bu-Y-Sh woodland.
Mu — Unstable sand.
Mf — Podzols on interdune plains; B-Bu-Y woodland.
Mr — Beach ridges; Pp heath and B woodland.

UNITS ASSOCIATED WITH DRAINAGE LINES

MAJOR VALLEYS (V)

V1 Valleys in granitic areas; >40 m relief; smooth steep slopes; narrow terrace.

Red earths, yellow duplex soils on slopes; K-M forest.
Brown loamy soils on terraces; K-M-Bb-Wt forest.

V2 Valleys in granitic areas; 20-40 m relief; smooth, moderate slopes; narrow terrace.

Red earths, gravelly yellow duplex soils on slopes; K-M-J forest.
Sands, yellow duplex soils on terraces; K-M-Bb-Wt forest.

V3 Valleys in granitic areas; 20 m relief; rocky slopes; terrace.

Yellow duplex soils on slopes; J-M-Ty forest.
Deep sands on terrace; Wt-Mel low forest.

V4 Terraces, levees and swampy tracts; <10m relief.
Sandy and silty alluvial soils; M-Mel-Bb-Wt forest.

V5 Valley of upper Kent River in granitic plateau; about 20m relief; gentle smooth flanks; broad flat saline floor (st).

Yellow duplex soils on flanks; J-M forest.
Yellow solonetzic soils on floors; Mel woodland; halophytes.

V6 Valley of upper Kalgan River in granitic and sedimentary rocks; 20-30 m relief, extensive gently sloping, irregular, often rocky flanks; broad flat saline floor (st).

Yellow duplex soils on flanks; J-M-W low forest.
Yellow solonetzic soils on floors; Mel scrub and halophytes.

V7 Valleys in sedimentary rocks; 20-40 m relief; short, steep, irregular slopes, much siltstone; occasional granite outcrop; narrow terrace (t).

Sandy and gravelly yellow duplex soils on slopes; J-M forest.
Deep sandy soils on terrace; M forest.

V8 Valleys in sedimentary rocks; 20 m relief; short, gentle flanking slopes; broad flat terrace (t).

Sands, and gravelly duplex soils on flanks; J-M forest.
Yellow duplex soils on terraces; J-M-Ys-Bb forest; heath.

MINOR VALLEYS (S)

S1 Valleys in granitic terrain, narrow swampy floor; <20 m relief.

Gravelly yellow duplex soils on smooth flanks; J-M-K forest.
Peaty soils on narrow floor; Wt low forest.

S2 Valleys in granitic terrain; <20 m relief; saline seepages.

Yellow duplex soils on gently sloping flanks; J-M forest.
Yellow solonetzic soils on floors; Mel woodland; halophytes.

S3 Shallow valleys in swampy terrain; <10 m relief; gentle slopes.

Sandy yellow duplex soils and podzols on flanks; J-M forest.
Peaty sands on floor; Tt heath and sedges.

S4 Broad swampy drainage zones; <5 m relief.

Podzols and sandy yellow duplex soils; Tt heath; sedgelands.

S5 Narrow, V-shaped valleys in granitic country; 5-10 m relief.

Sandy yellow duplex soils and deep sands; Mel-B woodland.

S6 Narrow V-shaped valleys, in sedimentary rocks; <10 m relief.

Sandy yellow duplex soils on slopes; J-M low forest.
Deep sands on narrow swampy floor; sedges and reeds.

S7 Broad valleys in sedimentary rocks; 30 m relief; smooth slopes; swampy floor (f)

Deep sands and iron podzols on slopes; Ab-J-Sh woodland.
Podzols and yellow duplex soils on floors; Mel woodland, Tt heath.

S8 Broad, shallow, gently sloping valleys and alcoves.

Deep sands and gravelly sands on slopes; J-Sh low forest.
Humus podzols on floors; Kg sedgeland, Mel woodland.

S9 Valleys in sedimentary rocks; 40 m relief; steep slopes; much siltstone swampy floor (f).

Shallow sandy soils on slopes; mallee heath.
Humus podzols on floors; Kg sedgelands, Tt heath.

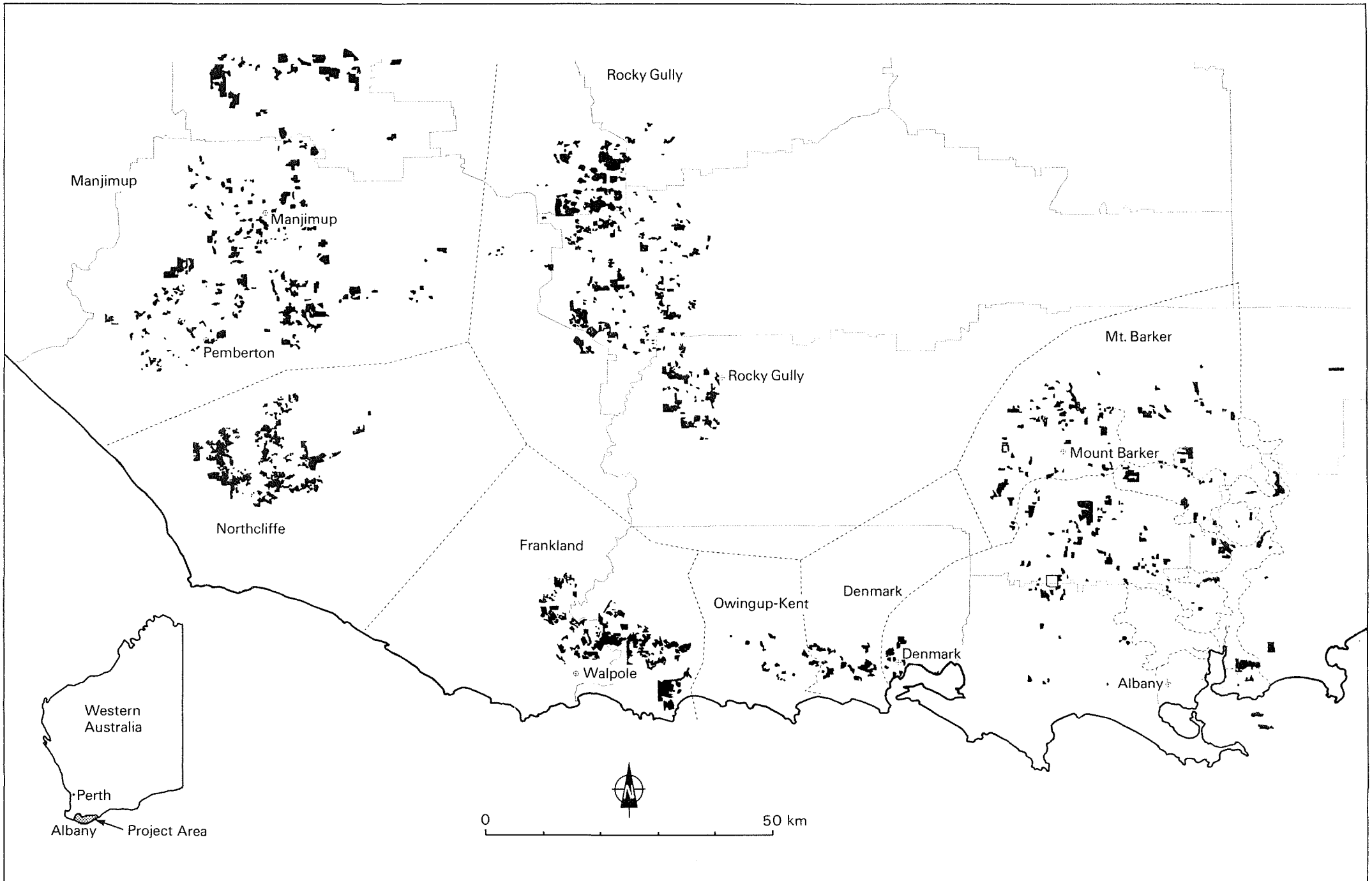

Figure 1. Uncleared Native Vegetation on Private Property

APPENDIX C

THE MCLEAN FOREST PROJECT

Environmental Review and Management Programme/

Draft Environmental Impact Statement

REPORT BY THE

TECHNICAL ADVISORY GROUP

F J HINGSTON
E R HOPKINS

MARCH 1987

CONTENTS

THE MCLEAN FOREST PROJECT - ADVISORY GROUP REPORT

SUMMARY AND RECOMMENDATIONS

The Project - The McLean Forest Project aims to use logs from uncleared areas of farms in the Manjimup, Denmark, Plantagenet and Albany Shires, in association with reforestation on the farms, to establish a continuing farm forest industry based on both sawn product and woodchip. The conversion process is fully integrated and dependent on sales of both sawn product and chipwood residues.

Capital to finance the sawing of low quality logs and a farm plantation programme is to be generated from the sale of woodchips from Albany on the open market and sawn material on the Perth market.

The Company requires a license to export woodchips from Albany.

The Project offers considerable economic benefits and a wider range of land management options, particularly to farmers, guaranteeing a continuing farm forestry industry which would not otherwise exist in the south coast region.

The Private Resource - There is an adequate log resource for the Project in farm forests of the region. The crucial question is whether farmers will cooperate to allow the Company access for logging and will participate in the plantation programme. The prognosis for cooperation is promising and future cash flows and log resources from plantations complement other schemes for the region. If necessary, McLean is prepared to establish the plantations on Company land.

State Forest Resources - Supplies of logs from State forest additional to those currently obtained by McLean are not essential to the Project. It is possible however, that further supplies to the extent suggested in the ERMP will be available through public tender. These would increase the viability of the Project, will not result in unfavourable impacts on State forest (no increase in area clearfelled) and pose no significant threat to the viability of established woodchip operations.

Rate of Clearing - The Project need not result in an increase in the extent of clearing on farms in the region beyond that which would occur in its absence. In fact, the Project will reverse the trend to reduce the area of forest in the region and the proposed plantations will lead to a net increase in the forest area.

Clearfelling is proposed on less than half the area to be cut-over (26 242 ha in 17 years). Of this clearing, half is to be converted to pasture and the remainder to plantations. The conversion to pasture is of the order expected from normal farm development and is under the control of the Soil Conservation Commissioner. Establishment of a Regional Farm Forest Management Committee should ensure that the regeneration and tree planting has no adverse impacts.

Environmental Impacts - Adverse physical and biological impacts on the environment resulting from the Project are minimal due to:

1. The small scale of the logging on a regional scale.

2. The dispersed nature of the logging.

3. The acceptance of plans for clearing, logging systems and subsequent land use which are least environmentally disturbing.

4. Clearing controls on catchments imposed by the Country Areas Water Supply Act.

5. Control by the Soil Conservation Commissioner to ensure that changes of land use are favourable.

6. Control to be practiced by the Regional Farm Management Committee to ensure that logging control, plantation location, and woodlot regeneration and aesthetics are to regional advantage.

Recommendation 1. A Regional Farm Forest Management Committee, reporting to the Environmental Protection Authority (EPA), be required to advise on, and monitor, environmental impacts associated with the Project.

Economics - The Project offers new options for land management and significant financial returns, both in the immediate and long term, to the depressed agricultural industry of the region.

Estimated costs of plantation establishment and future returns tend to be optimistic (possibly in the order of 25 per cent). If this is so, the consequences of incorrect estimation will rest solely with the Company and individuals entering into the contractural Farm Plans. They need not concern the Government or the region as a whole.

The Project promises continuing economic benefits to farming and other sections of the regional community.

Management Structure - The Project is most comprehensive and somewhat complex requiring long term planning and control for success. The Company proposes to develop the appropriate corporate structure and expertise to meet the challenge.

Recommendation 2. The Environmental Protection Authority should ensure that an appropriate corporate structure and expertise are available for planning and control.

Traffic - The Project will lead to a significant increase in heavy road traffic in the region, particularly over the Denmark bridge. This is not outside the expectations for a major highway and poses no special maintenance, comfort or safety problems. Controversy could relate to the noise aspects of increased traffic.

Miscellaneous - Specific issues within the Project concerning presentation of the Project, shipping, mill site, karri conservation, tourism, clearfelling and impact on soil were considered. Provisions within the ERMP are acceptable in these instances.

Scenarios - A number of different scenarios combining components of the Project were examined. The key points are:

(i) Effective log conversion from farm forests and or the development of plantations are not feasible without capital generated through the Company's ability to sell woodchips on the open market.

(ii) Capitalization of the log conversion equipment and export facilities for woodchips is not warranted unless the diminishing resource from native forest on farms can be augmented, after 9 years, by supplies from plantations.

(iii) Despite point (ii) above, it is possible that following commencement of the Project, the desirable plantation programme could be reduced as a cost cutting procedure. Such a possibility defeats the main long term objective of the ERMP. This contingency needs to be provided for in the export licence.

Export Conditions and Agreements - The Advisory Group considers the Project would have favourable regional, environmental and economic impacts if the export licence contains appropriate conditions for control.

Recommendation 3. The woodchip licence should specify export through the port of Albany.

Recommendation 4. The export agreement should equate export tonnages, up to a critical limit of the order of 146 000 tonnes per annum, to an annual plantation establishment quota.

Recommendation 5. The Regional Farm Forest Management Committee should monitor the Project to ensure that exported tonnages and rates of plantation establishment are in accord with requirements in the export licence.

Provided the recommendations are implemented the Project promoted in the ERMP is promising and desirable for future regional development.

1. INTRODUCTION

The Environmental Review and Management Programme and Draft Environmental Impact Statement for the McLean Forest Project was released for public comment on 29 November 1986. Comment on areas of recognised expertise has also been requested of various Government Departments by the Environmental Protection Authority.

A Technical Advisory Group was also appointed to assist in the environmental review process by examining the technical aspects of the project proposal, as presented in the ERMP/draft EIS.

The Advisory Group comprised

F J Hingston - CSIRO, Division of Forest Research
E R Hopkins - Department of Conservation and Land Management

During the first two days of the review, Ms J Tomkins from the Commonwealth Department of Arts, Heritage and Environment, assisted the Advisory Group by reporting on specialist discussions, meeting and inspections held during a visit to the south coastal region with the Environmental Protection Authority.

2. TERMS OF REFERENCE

The report is a specific sub-set of the environmental review, providing comments and recommendations on key issues.

The Environmental Protection Authority identified the following as issues to be addressed:

- adequacy, accuracy and reliability of data and predictions in the ERMP/ draft EIS;
- primary environmental impacts of the project;
- secondary impacts on the region;
- implications to future land use in the region; and
- consequences of the project not proceeding or only parts of the project proceeding.

The Group was advised that the review and report were to be completed within two weeks.

3. METHOD

Briefings were arranged with specialists on Forest Inventory (Department of Conservation and Land Management), Agricultural Economics (Department of Agriculture), Plantation Economics (CALM), Hardwood Milling (CALM), Salinity and Water Resources (Water Authority) and Traffic (Department of Conservation and Environment and Main Roads). A meeting with the consultant, Ross Gobby and Associates, was arranged to clarify the methods used to estimate resources and plantation yields and explain the proposed management of the scheme.

4. OBJECTIVES OF THE PROJECT

McLean Sawmills (1966) Pty Ltd proposes in the ERMP/draft EIS to increase production of sawn timber and woodchips in an integrated operation which will maximize recovery of timber and economic returns from low grade logs.

The log resource is to be harvested from uncleared areas of farms in the Manjimup, Denmark, Plantagenet and Albany Shires. Part of the proceeds from this operation is to be used for reforestation on these farms. Material from farm forests and the plantations established will be used to produce sawlog and chip material in both the short (0-17 years) and long term (17+ years) future. Logs from State forest, additional to those currently obtained, will be used where available but are not essential to the proposal. To obtain the maximum recovery of sawn timber from otherwise un-commercial logs it is essential to market the mill residues as woodchips. The project will be underpinned by exporting up to 240 000 tonnes of woodchips a year from the port of Albany. Main benefits from the project are cited in the ERMP/ draft EIS as:

i) A significant contribution to halting the declining availability of hardwood sawn timber for the Perth market, to be made through increased supplies from salvage material in the short term to be replaced by sawn softwood in the long term.

ii) Significant export earnings from woodchip sales.

iii) Logging on private property will provide significant, immediate cash payments to farmers and finance a plantation programme to provide wood resources for a continuing forest industry in the south coast region.

iv) The viability of farmers participating in the scheme will be improved with future returns from plantations established and maintained on their property, at the cost of the company.

v) Advantage will be taken of the potential of the climate and soils of the region to grow wood to benefit the regional economy by providing a future renewable resource for the timber industry and diversifying the land use options for farming inthe region.

vi) The waste of wood which is currently being burnt in clearing for agriculture will be reduced.

vii) The decline in the area of forest in the region will be reversed.

viii) The efficiency of the timber industry will be improved.

5. RESOURCES AVAILABLE ON FARMS

5.1 AREA OF FORESTS

Procedures used to estimate the area of forests remaining on farms in the region are considered to be well based and adequate for the ERMP/draft EIS. It can be shown that several times the 26 242 hectares required for logging exist in the area; excluding the A zones of catchments where clearing is restricted by legislation. Having shown this principle, it is not necessary to improve the estimate. Resource availability then depends on farmer cooperation to allow the company to log suitable areas on their properties.

Significant in this respect are the following points.

i) Questionnaires distributed to farmers by McLean and others will provide further information about the availability of log resources on farms and the willingness of farmers to participate in the plantation scheme.

ii) Notifications of "intent to clear" lodged with the Soil Conservation Commissioner will indicate the extent of the area available for clearing, in the short term.

iii) If the estimate of available resources is inadequate or over optimistic, the Company will bear the responsibility and there need be no significant adverse social or economic impacts.

5.2 VOLUME OF TIMBER

The method of assessing site capability classes and estimating timber volumes from the areas of forest on private property is adequate for the ERMP/draft EIS. The estimates of volumes of timber on the different site classes are within the ranges commonly found on similar sites by CALM staff.

The cost of conducting more detailed inventories on a regional scale would be of the order of several hundreds of thousands of dollars. This expenditure is not warranted for the project proposal.

It is our opinion that current inventory estimates are satisfactory and the availability of the resource rests on the degree of farmer cooperation.

5.3 FARMER COOPERATION

Early evidence provided by questionnaire surveys of farmers by McLean and others indicate that cooperation will be forthcoming for both log resources and planting areas. To some extent early agreements between the Company and farmers would be expected to catalyse the further cooperation required as the project proceeds.

The average cash payments for logs on private property and the opportunity for income to be generated from plantation establishment and maintenance, appear to offer adequate inducement for farmer cooperation.

In the absence of adequate cooperation the Company could abort the scheme without significant loss to farmers or the State. If log resources are made available but there is reluctance to make suitable land available for plantations, the ERMP indicates that the Company may establish the plantations on its own land.

A check of the availability of log resources and of land for plantation establishment will be essential if the project is approved. The short term prognosis is favourable, but the Company would be expected to confirm this as part of their planning procedure.

6. STATE FOREST RESOURCES

Salvage and thinning logs from State forest are likely to be available within the scope of current operations and planning by CALM. These resources are expected to be disposed of through public tender. McLean Sawmills are in

a favourable position to acquire such resources because of the location of the mill and their proven efficiency in utilizing low quality logs for sawn timber.

Provided the export licence includes conditions requiring the regional reforestation programme and export through Albany, acquisition of logs from State forest need not pose a threat to the regional advantages offered by the project. The provision of such additional resources would not increase the area scheduled to be logged.

7. RATE OF CLEARING

The ERMP states that the average area logged-over annually is within the expected rate of clearing of private property forest for agricultural development.

Work carried out to assess the past rate of clearing is as thorough as can be expected. A check with the Soil Conservation Commissioner revealed that notices of "intent to clear" for the next 12 months could be well in accord with the prognosis in the report.

The essential requirement will be best clarified by the return from farmer questionnaires concerning cooperation in the proposed project.

8. ENVIRONMENTAL IMPACTS

Project impacts relating to soil and water salinity, flora, fauna, soil degradation, dieback, fire, weedicides and pollution are adequately considered in the ERMP/draft EIS.

Environmental impacts will be minimal due to:

i) The small scale and the widely dispersed operation (26 242 ha cut-over in 17 years).

ii) The fact that the clearing for pasture establishment (4 800 ha) is expected to occur whether the project proceeds or not.

iii) The increased forest area resulting from establishing plantations.

iv) The control of forestry operations.

Control of impacts is to be provided for by:

i) Clearing control legislation. (Country Arewas Water Supply Act)

ii) Surveillance by the Soil Conservation Commissioner where land use changes are concerned. (Soil and Land Conservation Act).

iii) Monitoring and regional advice from the Regional Farm Forest Management Committee for logging, regeneration and plantation standards on farm woodlots outside of the control of (i) or (ii) above.

It is suggested that environmental impacts (physical and biological) need not be a problem provided the Regional Farm Forest Management Committee is set up to monitor and guide both the logging and plantation operations. This

Committee is seen as an extension of the Regional Soil Conservation Committee to include forestry issues.

RECOMMENDATION 1 - A REGIONAL FARM FOREST MANAGEMENT COMMITTEE, REPORTING TO THE ENVIRONMENTAL PROTECTION AUTHORITY, BE REQUIRED TO ADVISE ON AND MONITOR ENVIRONMENTAL IMPACTS ASSOCIATED WITH THE PROJECT.

9. ECONOMICS

Agricultural activity in the region is generally depressed and lacks future options to improve viability. Payments received by farmers, from sale of logs and plantation maintenance, will provide cash flow.

Long term benefits offered in diversifying farm activity by inclusion of tree plantations are real and significant.

Evidence suggests that in many areas past economics have favoured the easy (non-timbered) clearing and considerable scope offers to extend the area of quality pasture land through continued clearing of forest on farms. This could make previously cleared land available for plantations.

Average values for logging returns to the company ($48 606 per property) appear to be a reasonable assessment. The stated yields of logs for the various forest types, and their values, are realistic.

Plantation yields for pine are considered to be optimistic and obtainable only on high quality soils, in high rainfall areas and with the best silvicultural management. In practice it is doubtful whether these conditions are consistently achievable. The average yields could be less than stated.

Costs for plantation establishment are possibly 25 per cent lower than is usually accepted. The calculation of future returns to the landowners, based on data available in the ERMP/draft EIS, is correct. If the yields are optimistic, as mentioned above, and the costs are low, the returns could be less than predicted.

It should be noted that if this Advisory Group judgement is correct and yields and establishment costs are optimistic, the economic consequences will be borne by the Company and the parties to the Farm Plan Agreement. They should not affect the export agreement and the State need not be obligated to relief measures.

It is difficult to assess the economics of the Eucalyptus globulus plantations in Western Australia as experience with this species in this environment is limited. Yields projected appear somewhat optimistic (as were the Pinus radiata yields discussed previously).

The ERMP/draft EIS statement "Yields from the 19 000 ha of P. radiata and hardwood (mainly E. globulus) plantation will be sufficient to enable the project to begin phasing in the use of log resourcces from plantations after year 9 and to supply all requirements by year 17."(page 6) is not accepted. Neither the volume nor the assortment of sizes of logs expected from thinnings at age 17 would make a sawlog output of the scale outlined in the Project viable. A continued partial dependence for saw log on native forest resources, or plantation resources external to the region, would still be required for some years. This would not affect any export agreement.

10. MANAGEMENT, INFRASTRUCTURE AND INNOVATION

The project is most comprehensive and complex, requiring long term planning and control. The ERMP/draft EIS states "The Company recognises the need for commitment and good management systems to implement the environmental management proposals successfully." (page 27) Further, "An appropriate corporate structure is being developed to effectively manage the project. This includes developing an environmental management capability." (page 27) Corporate structure, expertise and commitment are essential to the success of the project. There is no clear indication how these will be developed either in the ERMP/draft EIS or from the briefing sources available to the Advisory Group.

The EPA should satisfy itself that an appropriate organisation would be set-up to initiate and manage the project.

> RECOMMENDATION 2 - THE ENVIRONMENTAL PROTECTION AUTHORITY SHOULD ENSURE THAT AN APPROPRIATE CORPORATE STRUCTURE AND EXPERTISE ARE AVAILABLE FOR PLANNING AND CONTROL.

11. TRAFFIC

Traffic to and from the mill, over the Denmark bridge in particular, is relatively high and will increase signficantly with the project. The Advisory Group considers that as the traffic is along a major highway, increases in traffic density are expected to occur over time, whether the project proceeds or not. Commencement of the project will hasten traffic and highway development.

The option to bypass the town of Denmark would be considered by the Main Roads Department if traffic density increased sufficiently. We understand from briefing, that the projected traffic density would need to increase four times for this to be warranted.

The Group has not the expertise to assess whether the impact of increased traffic is acceptable from the noise and comfort aspects. An expert report on the traffic question is to be provided to the EPA from the Main Roads Department.

12. MISCELLANEOUS ISSUES

Several other specific issues discussed warrant brief mention.

12.1 PRESENTATION OF THE PROJECT PROPOSAL

The proposal is comprehensive, discussing the wide range of topics required to assess the complex and sensitive issues arising from harvesting, especially clearfelling, native forest to produce woodchips for export.

A difficulty for assessment of the project is the large number of tables and figures that need to be reconciled and confirmed. The presentation in some parts of the ERMP/draft EIS could be improved. For example there are errors and inconsistencies in the critical table on pages 21 and 22 of Volume 2 (Appendix). We are satisfied that correction of the table will not change our assessment of the availability of log resources on farms, but recognize that poor drafting may raise doubts about the reliability of data presented.

We suggest that one better quality map showing the general area from which the log resource on farms is to be obtained and the area excluded (ie "A" zones of water catchments, State Forest and National Parks and Reserves) would be helpful.

12.2 SHIPPING

We are not in position to assess whether a market for woodchips exists and whether suitable shipping could be arranged. There is no reason to doubt the claims in the ERMP. These aspects need only concern the Company.

12.3 MILL SITE

The mill site is not completely desirable but is functionally adequate and would have no significant impacts, with the exception of increased regional traffic flow. It should be appreciated that under the project the biggest hardwood sawmill in the State will be developed on the site (output of 47 000 m^3 to 71 000 m^3 per annum of sawn material and 122 000 to 191 000 m^3 of woodchips per year).

12.4 KARRI CONSERVATION

There is no threat to the conservation of karri and other species as a result of the proposal because adequate reserves are provided in existing and proposed National Parks and in State forest.

12.5 TOURISM

The main values sought by tourists visiting the region (forest and coastal scenery) would not be affected by operations on private property. The project could favour an increase in tourism to the south coast region. Landscaping will be provided through Farm Forest Management Plans.

12.6 CLEARFELLING

Clearfelling will be practiced on 10 814 ha of the 26 242 ha of forest on private property to be cut-over in the 17 year period nominated. Of this, the land converted to pasture (4 840 ha) would be brought to the notice of the Soil Conservation Commissioner who could modify or prevent clearing plans being implemented. This area is well within the expectations of the amount of private forest that will be cleared and converted to pasture, over the stated period of 17 years, if there is no Project.

The further 5 974 ha of the clearfelled area to be replaced with introduced tree species does not represent a change of land-use. It is also expected to be within the scope of clearing that would occur irrespective of the Project. The establishment of plantations on this clearfelled land should have positive impacts on the environment. As this activity is probably outside the authority of the Soil Conservation Commissioner it would be planned and monitored by the Regional Farm Forest Management Committee.

12.7 IMPACT ON SOIL

If forestry operations are properly managed, as indicated in the project proposal, there should be no long-term adverse impact on soils due to thinning, clearfelling and burning forest residues. With reference to soil fertility, the amounts of nutrients lost from native forest ecosystems are small relative to the amounts applied in fertilizers. For fast-grown

plantations (E globulus and P radiata) the rates of fertilizer application, required to achieve the necessary growth rates, far exceeds any losses through forestry operations. In this respect forestry has no greater, and probably less, impact than pasture development.

13. SCENARIOS FOR COMPONENTS OF THE PROJECT

The components of the project considered in the ERMP are:

A The sale of residues to the W A Chip and Pulp Co (WACAP).
B The export of woodchips from Albany.
C Sawn timber sold on the Perth market.
D Salvage and thinning material obtained from CALM currently through open tender.
E Possible future log supplies from CALM obtained through open tender.
F Logging native forest on private property.
G Plantations of E globulus for woodchip production.
H Plantation of P radiata for future sawn timber.

The main scenarios which could apply for practical operation are presented in Table 1.

13.1 MAIN POINTS FROM THE SCENARIOS

(i) Effective recovery of sawn timber from conversion of logs from farm forests and or the development of the plantation projects are not feasible without the extra capital generated through the Company's ability to sell woodchips from Albany on the open market.

(ii) Capitalization of the log conversion equipment and export facilities for woodchips is not warranted unless the diminishing resource from native forest on farms can be augmented, after nine years, by supplies from plantations.

(iii) Despite (ii) above, it is possible that following commencement of the Project, major alterations such as a Company takeover could lead to the cessation or reduction of the plantation programme, as a cost reduction measure, ie Scenarios 6-11. This possibility, which defeats the main long-term objective of the ERMP/draft EIS to sustain production in the region, can be prevented by imposing conditions in the export agreement (see Section 14).

14. EXPORT LICENCE CONDITIONS AND AGREEMENTS

The Advisory Group consider that the Project will have favourable regional, environmental and economic impacts if the export licence contains the following conditions:

(i) Woodchip export to be through the port of Albany.

(ii) Export to the suggested critical viable limit of 122 000 m^3 to be conditional on the establishment of the progressive programme of plantations stated in the ERMP/draft EIS. This programme varies with the stage of project development but should relate to hectares of plantation, as per schedule each year, per 1 000 m^3 of woodchip exported.

(iii) Monitoring to be carried out by a regional body such as the Regional Farm Forests Management Committee to ensure the commitments to plantation establishment and woodchip export schedules are complied with. Annual report should be to the EPA.

If the foregoing requirements are included in the agreement it is not considered relevant whether the woodchips are obtained from private property or State forest, or whether the ownership of the Project changes in future.

RECOMMENDATION 3 - THE WOODCHIP LICENCE SHOULD SPECIFY EXPORT THROUGH THE PORT OF ALBANY.

RECOMMENDATION 4 - THE EXPORT AGREEMENT EQUATES EXPORT TONNAGES, UP TO A CRITICAL LIMIT OF THE ORDER OF 146 000 TONNES PER ANNUM, TO AN ANNUAL PLANTATION ESTABLISHMENT QUOTA.

RECOMMENDATION 5 - THE REGIONAL FARM FOREST MANAGEMENT COMMITTEE SHOULD MONITOR THE PROJECT TO ENSURE THAT EXPORT TONNAGES AND RATES OF PLANTATION ESTABLISHMENT ARE IN ACCORD WITH REQUIREMENTS IN THE EXPORT LICENCE.

15. CONCLUSIONS

The Advisory Group find the Project promoted in the ERMP/draft EIS innovative, viable and most desirable for future regional development provided:

(i) The EPA can confirm the Advisory Group assessment that increased noise from traffic on the south coast highway is an acceptable and inevitable impact.

(ii) The required Company structure and the expertise to successfully manage the project are established.

(iii) The export licence nominates the port of Albany for export operations.

(iv) The approval equates export tonnages with a plantation establishment quota.

(v) The export licence requires monitoring of item (iv) above by a suitable regional body such as the Regional Farm Forest Management Committee; as stated in the ERMP/draft EIS.

16. REFERENCES

McLean Sawmills (1966) Pty Ltd (November 1986) - The McLean Forest Project. Environmental Review and Management Programme/Draft Environmental Impact Statement. Prepared for McLean Sawmills (1966) Pty Ltd by Ross Gobby and Associates, PO Box 11, Osborne Park WA 6017.

TABLE 1

MAJOR SCENARIOS DERIVED FROM COMPONENTS OF THE PROJECT

SCENARIO	EXPORT WOODCHIP THROUGH WACAP	EXPORT WOODCHIP THROUGH ALBANY	SAWN PRODUCT TO PERTH	LOG SUPPLY CURRENT FROM CALM (TENDER)	LOG SUPPLY EXTRA FROM CALM (TENDER)	LOG SUPPLY FROM FARMS	PLANTATIONS EUC GLOBULUS	PLANTATIONS PINUS RADIATA
1	√		√	√				
2	√		√	√	√			
3		√	√	√				
4		√	√	√	√			
5	√		√	√		√		
6		√	√	√		√		
7		√	√	√	√	√		
8		√	√	√		√	√	
9		√	√	√	√	√	√	
10		√	√	√		√		√
11		√	√	√	√	√		√
12		√	√	√		√	√	√
13		√	√	√	√	√	√	√
14		√	√	√			√	√
15		√	√	√	√		√	√

TABLE 1 cont'd

SCENARIO	CONSEQUENCES OF SCENARIOS	
	ADVANTAGES	DISADVANTAGES
1.	[Current procedure. Will continue if Project is unacceptable.] i) Sawn timber decline reduced. ii) Efficient utilization of available logs.	i) Limited regional benefits. ii) Uneconomic to convert lower quality logs. iii) Uncertain life of resource.
2.	[Most desirable if the Project is unacceptable] As for 1.	As for 1.
3.	NIL	i) Not viable. ii) Capital for woodchip export not warranted.
4.	NIL	As for 3.
5.	NIL	i) Not viable ii) Inadequate return from woodchip to convert low quality logs from farms.
6.	NIL	Short term return from woodchips is not sufficient to capitalise conversio equipment and port facilities.
7.	NIL	Probably not viable. As for 6.
8.	i) Regional benefits to farmers. ii) Reduction of log wasteage in clearing. Improved sawn timber production for WA. iv) Useful export revenue. v) Improved sawmill efficiency.	i) No long term future for saw-milling industry in the region. ii) Best use of soils for reforestation is not possible. iii) Full benefits of farm forestry are not realised.
9.	As for 8. Improved sawmill profits.	As for 8.
10.	NIL. As for 6 & 7.	Doubtful viability.
11.	NIL. As for 10.	As for 10
12.	[Desirable Scenario A in ERMP]. i) Short and long term advantages to farmers. ii) Long term future for farm-forestry. iii) Reduction in log wasteage in clearing. iv) Improved sawn timber production for WA. v) Useful export revenue. vi) Improved sawmill efficiency. vii) Best use of farm soils for reforestation.	i) Environmental control and monitoring required. ii) Export agreement to be conditional.

SCENARIO	CONSEQUENCES OF SCENARIOS	
	ADVANTAGES	DISADVANTAGES
13.	[Scenario B in ERMP] As for 12. Higher sawmill production and profits	As for 12.
14.	NIL	i) Not viable. ii) Insufficient capital generated to finance plantation scheme.
15.	NIL	As for 14.

ENVIRONMENTAL PROTECTION AUTHORITY
1 MOUNT STREET PERTH, WESTERN AUSTRALIA 6000
Telephone (09) 222 [illegible]

HON MINISTER FOR CONSERVATION AND
LAND MANAGEMENT

Your Ref:
Our Ref: BAC:jc
Enquiries:

You are aware that the Environmental Protection Authority requested the Department of Agriculture to verify the estimates of forest on privately-owned land given in the McLeans proposal. You are also aware that this study, based on more recent data than in the McLeans proposal, indicates a significant shortfall in the estimates of area of forest on private land.

The proponent has now prepared a near-to-final copy of ERMP/EIS, which indicates an increased interest in access to resources from State Forest. Most of this interest is in Karri thinnings, or in Marri in the Jarrah-Marri forest east of the Frankland River. In order to complete its assessment, the Environmental Protection Authority requests you to seek from your Department a confirmation of the resource from State Forest likely to be available for this project.

B A CARBON
CHAIRMAN
8 June 1987

MINISTER FOR CONSERVATION
AND LAND MANAGEMENT

MR B A Carbon
CHAIRMAN
ENVIRONMENTAL PROTECTION AUTHORITY

Your memorandum of 8 June 1987 refers to the McLean Forest Project and the Company's response to information from the Department of Agriculture indicating a significant shortfall in estimates of area of forest on private land. The Departmennt of Conservation and Land Management has access to some additional statements made in revision of the McLean's ERMP/EIS and has provided me with its comments on these papers.

The Executive Director has advised me that at no time in the past has he or his Department made any commitment for additional salvage logs or woodchip logs from State forest to be provided to the McLean group. The Department of Conservation and Land Management has made it quite clear to Mr McLean that although he may submit a tender for supplies which are put to tender, he has no claim on timber from State forest.

I wish therefore to confirm advice from my Department that there is no resource available in State forest either as salvage from the operations of WA Chip and Pulp Co or in areas east of the Frankland River for the McLean Forest Project.

B. Hodge.

Barry Hodge, MLA
MINISTER FOR CONSERVATION AND
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25 June 1987

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