ALDIS NOMINEES PTY LTD

CONSULTATIVE ENVIRONMENTAL REVIEW

Clearing of native vegetation on Plantagenet Location 6783 Branson Road, Shire of Plantagenet.

August 1997

Contents

Introduction

Environmental Impact Assessment Process

Part IV of the Environmental Protection Act states that any proposal that appears likely, if implemented, to have a significant effect on the environment or has the potential to cause pollution, shall be referred to the EPA for environmental impact assessment (EIA).

If the EPA determines that a proposal requires formal assessment an environmental review document is required. This document outlines the proposal, existing environment, potential environmental impacts and methods of managing these impacts, so that the environment is protected to an acceptable level. The document is advertised and made available for the public. The EPA then prepares a report on the proposal for the Minister for the Environment, the report may include recommendations. The Minister then decides on the environmental acceptability of the proposal.

The level of assessment (CER, PER, ERMP) is set, based on the location, size, complexity, range, duration and manageability of environmental issues associated with the proposal.

Proposal to clear native vegetation on Plantagenet Location 6783

A Notice of Intent to clear native vegetation on Location 6783, Branson Road, Shire of Plantagenet was referred to the Environmental Protection Authority (EPA) by the Commissioner of Soil and Land Conservation (Commissioner) in February 1996 in accordance with the requirements of Part IV of the Environmental Protection Act. The amount of native vegetation originally proposed to be cleared on Location 6783 was between 300 and 400 hectares (ha). The proposal has since been modified so that the amount of native vegetation to be cleared has been reduced to 250 ha.

The EPA set the level of environmental impact assessment at CER on the 2 April 1996 due to concerns that the clearing may have a significant effect on salinity, Declared Rare Flora and vegetation communities with high species diversity.

The method of preparing a CER document for a proposal to clear native remnant vegetation on private land in the agricultural region differs from the normal process set out in the Environmental Impact Assessment Administrative Procedures (1993). A CER document for a land clearing proposal is prepared in the accordance with the Memorandum of Understanding (MOU) for the protection of remnant vegetation on private land in the agricultural region of Western Australia.

Memorandum of Understanding

The aim of the MOU is to implement a system of evaluating land clearing proposals for agricultural purposes in Western Australia in which:

- a range of natural resource conservation issues are considered in one streamlined process;
- landholders and the general public can be confident that there are clear and objective criteria in place against which proposal are evaluated; and
- expedited procedures ensure that proposals are treated speedily, with the requirements of a range of Acts and authorities being brought together into one streamlined process.

The streamlined assessment process set out in the MOU requires that the CER comprise of the following documents:

- Environmental Protection Authority Preliminary Assessment Report;
- Correspondence from the Commissioner of Soil and Land Conservation (Commissioner) referring the proposal to the Environmental Protection Authority;

- Proponent's Notice of Intent to Clear Land on Plantagenet Location 6783;
  Report from the Commissioner
- Advice from the Water and Rivers Commission
- Report from the Commissioner of Soil and Land Conservation.

Please note that while the EPA was preparing this CER, which is the first of such documents to be prepared in accordance with the MOU, it was found that the order of the above documentation as set out in the MOU has required some modification so that it is presented in a comprehensible order. This has not changed the intent of the MOU or the outcome of the EPA's assessment.

Status of the EPA Preliminary Assessment Report
The EPA has received and considered advice from the:

- Commissioner of Soil and Land Conservation;
- Agriculture Western Australia;
- Botanist Dr Gillian Craig
- Department of Conservation and Land Management; and
- Water and Rivers Commission;

This advice has been considered by the EPA in its preliminary assessment.

The EPA's Preliminary Assessment Report contained in this CER outlines the environmental factors considered and assessed by the EPA's in the preliminary assessment of the proposal. The EPA's assessment has been based on the best information available to the EPA at this stage of the formal assessment process.

The EPA will consider submissions received during the consultative review period of this proposal and will further assess the proposal taking into account the information provided in these submissions. The EPA will then finalise its report and forward it to the Minister for the Environment.

An invitation from the EPA to make a submission on this proposal is contained in this report.

INVITATION

The Environmental Protection Authority (EPA) invites people to make a submission on this proposal.

The Consultative Environmental Review (CER) proposes clearing of native vegetation on Plantagenet Location 6783 Branson Road, Shire of Plantagenet. In accordance with the Environmental Protection Act, a CER has been prepared which describes this proposal and its likely effects on the environment. The CER is available for a public review period of 4 weeks from 18 August 1997 closing on 12 September 1997.

Comments from government agencies and from the public will assist the EPA to prepare a final assessment report.

Why write a submission?

A submission is a way to provide information, express your opinion and put forward your suggested course of action - including any alternative approach. It is useful if you indicate any suggestions you have to improve the proposal.

All submissions received by the EPA will be acknowledged. Submissions will be treated as public documents unless provided and received in confidence subject to the requirements of the Freedom of Information Act, and may be quoted in full or in part in each report.

Why not join a group?

If you prefer not to write your own comments, it may be worthwhile joining with a group or other groups interested in making a submission on similar issues. Joint submissions may help to reduce the workload for an individual or group, as well as increase the pool of ideas and information. If you form a small group (up to 10 people) please indicate all the names of the participants. If your group is larger, please indicate how many people your submission represents.

Developing a submission

You may agree or disagree with, or comment on, the general issues discussed in the CER or the specific proposals. It helps if you give reasons for your conclusions, supported by relevant data. You may make an important contribution by suggesting ways to make the proposal environmentally more acceptable.

When making comments on specific proposals in the CER:

- clearly state your point of view;
- indicate the source of your information or argument if this is applicable;
- suggest recommendations, safeguards or alternatives.

Points to keep in mind

By keeping the following points in mind, you will make it easier for your submission to be analysed:

- attempt to list points so that issues raised are clear. A summary of your submission is helpful;
- refer each point to the appropriate section, chapter or recommendation in the CER;
- if you discuss different sections of the CER, keep them distinct and separate, so there is no confusion as to which section you are considering;
- attach any factual information you may wish to provide and give details of the source. Make sure your information is accurate.

Remember to include:

- your name,
- address,
- date; and
- whether you want your submission to be confidential.

The closing date for submissions is: 12 September 1997

Submissions should be addressed to:

Environmental Protection Authority
Westralia Square
141 St George's Terrace
PERTH WA 6000

Attention: Gary Williams

Document 1

Environmental Protection Authority
Preliminary Assessment Report

Clearing of native vegetation on Plantagenet Location 6783 Branson Road, Shire of Plantagenet.

Aldis Nominees Pty Ltd

August 1997

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Appendices

1. Introduction and background

This report provides the Environmental Protection Authority's (EPA) preliminary assessment on the environmental factors relevant to the proposal to clear 250 ha of native vegetation on Plantagenet Location 6783 Branson Road, Shire of Plantagenet. The amount of native vegetation originally proposed to be cleared on Location 6783 was 300-400 ha. The proposal has since been modified so that the amount of native vegetation to be cleared has been reduced to 250 ha.

The proposal to clear Location 6783 has been assessed in accordance with the principles that have since been included in the Memorandum of Understanding (MOU) which was adopted by the following government authorities and agencies on the 7 March 1997:

- Commissioner of Soil and Land Conservation;
- Environmental Protection Authority;
- Department of Environmental Protection;
- Agriculture Western Australia;
- Department of Conservation and Land Management; and
- Water and Rivers Commission

Location 6783 is located approximately 70 kms north east of Albany, immediately south of the Stirling Range National Park (Appendix 1: Figure 1a).

The Notice of Intent to clear Location 6783 was referred to the EPA by the Commissioner in February 1996 for environmental impact assessment (Document 2). The level of assessment was set at CER by the EPA on the 4 April 1996.

The proponent and owner of the property is Aldis Nominees Pty Ltd.

2. The proposal

The proponent proposes to clear 250 ha (21% of total property area) of native vegetation on Location 6783. The property has a total area of 1182 ha of which 340 ha (29%) is currently cleared. It is proposed to retain 589 ha (50%) of the property as native vegetation (Document 2).

Further details on the proposal are given in the Report from the Commissioner of Soil and Land Conservation (Document 3).

3. Environmental factors

3.1 Relevant environmental factors

The environmental factors considered by the EPA to be relevant to the proposal are as follows:

(a) Water;
(b) Wetlands;
(c) Declared Rare and Priority Flora;
(d) Specially Protected (Threatened) Fauna; and
(e) Vegetation communities

The relevant environmental factors are discussed below and summarised in Appendix 2: Table 1.

The EPA considers that Water and Wetlands are the only two factors where there is sufficient information for the EPA to discuss the issues in enough detail to form a position. A vegetation survey and other additional information would need to be available before the other factors could be assessed.

However, enough is known about the factors Water and Wetlands for the EPA to form the opinion that the proposal can not meet the environmental objectives and thus should not proceed. The EPA has decided that additional information about the remaining factors (c), (d) and (e) above, is not required unless the Minister for the Environment determines that the assessment of these remaining factors was required before a decision on the proposal could be made.

3.2 Water

Aspects of water

Location 6783 is situated on a sandplain between the Stirling Range and the coast. The sandplain is internally drained meaning that there are no watercourses taking surface runoff out of the area (Appendix 1 Figures 1a & 1b). Depressions in the area hold water during the winter, where it partly evaporates and partly recharges the groundwater (Ferdowsian et al 1996).

The northern half of Location 6783 is situated above a stagnant local aquifer and the southern half of the property is situated above a regional aquifer. Water quality in both aquifers is saline (>10,000 mg/L TSS) (Document 4: Attachment 2).

Advice from a number of agencies has been provided:

Department of Environmental Protection
The DEP appointed Ms Gillian Craig to provide an initial assessment report of the clearing proposal. Ms Craig's report states that "surface expression of salinity can be seen in the Yate Swamps near the property. The whole region is experiencing increasing salinity and rising water tables and eventually large areas of the National Park and the property adjoining the eastern boundary of Location 6783 will become salt affected" (Document 4: Attachment 3).

Agriculture Western Australia
The comments by Ms Craig are supported by a report prepared by Agriculture Western Australia's hydrologist which states that a salinity risk is present in depressions and swamps in the locality (Document 4: Attachment 2). These depressions act as evaporation pans and further clearing of deep rooted native vegetation will cause groundwater levels to rise so that more and more wetlands will become discharge sites, becoming brackish before turning saline.

The majority of the groundwater passes through the depressions and wetlands and eventually enters the large salt lake situated to the east of Location 6783 in the Stirling Range National Park (Appendix 1: Figures 1a and 1b). Although this lake is already saline the rising groundwater level will cause salinity to spread and impact on the vegetation on the fringes of the lake, within the National Park.

The hydrologist has also advised that the groundwater level is approximately 15 metres below the surface of Location 6783 where there is remnant vegetation. The groundwater level would be much closer to the surface in those areas where the vegetation has been cleared.

Commissioner of Soil and Land Conservation
The Commissioner has advised that the groundwater in the local and regional aquifers is rising by approx 200 mm per year and the proposed clearing on Location 6783 will impact on the rate at which groundwater will rise if appropriate farm management practices are not used to reduce

recharge. It is estimated that the proposed land clearing represents approximately 3% of the regional aquifer and could result in a 6 mm per year rise in groundwater levels below Location 7683 without successful farm management (Document 4).

It is important to note that the groundwater level is currently rising at 200 mm per year and will continue to rise at this rate, due to the amount of vegetation that has already been cleared in the catchment. Groundwater rising at this rate will impact on the nature conservation values of wetlands and remnant vegetation without any further clearing.

Some of the salinity on the property which adjoins the eastern boundary of Location 6783, is due to clearing and present farm management on that property. The problems on this property would be compounded if excessive clearing occurred on Location 6783. Native vegetation around the wetland on Location 6783 should not be cleared to minimise runoff and recharge into the aquifer (Document 4; Attachment 2).

The Commissioner has concluded "that land degradation (including salinity) is not likely to result if Location 6783 is cleared and vegetation retained in accordance with the Agreement to Reserve" (Document 4).

The Commissioner has advised that the following farm management practices can be implemented on Location 6783 to minimise the impact of the proposed land clearing on groundwater recharge and groundwater quality:

- construct interceptor drains;
- phase cropping using lucerne and cereals in rotation;
- retain remnant vegetation surrounding the wetlands; and
- fence off remnant vegetation.

These management procedures are not imposed as legally binding conditions by the Commissioner. However, the proponent has made commitments to undertake a number of these management procedures.

It should be noted that the Commissioner's advice is provided in accordance with the provisions of the Soil and Land Conservation Act which is intended to prevent and mitigate land degradation where it may impact on the future use of the land. In rural areas 'future land use' is interpreted as meaning agriculture.

This is an important distinction when considering the Commissioner's advice. The Commissioner has advised that the proposal will not cause land degradation on future agricultural landuses. This should not be interpreted to mean that the proposal will not impact on nature conservation values. Based on the advice provided by the Commissioner, groundwater levels and salinity are increasing and will impact on nature conservation values. The proposed clearing on Location 6783 may compound these problems in the catchment. The Environmental Protection Act provides the only statutory mechanism for protecting certain nature conservation values.

It should also be noted that the Commissioner does not give approval for land clearing but identifies areas to be protected from clearing to prevent land degradation. This restricts the ability of the Commissioner to retain vegetation to protect nature conservation values.

Water and Rivers Commission

The Water and Rivers Commission (WRC) has advised that the area where the property is located is relatively flat and has a low groundwater gradient and is clearly subject to a salinity risk. There is no evidence to suggest that the management proposed by the property owner and Agriculture Western Australia are likely to counteract the affect of clearing deep rooted vegetation (Document 5).

Assessment

The area considered for assessment of this relevant environmental factor includes the catchments for the local (10,000 ha) and regional (greater than 30,000 ha) aquifers in which Location 6783 is situated.

It is important to note that the groundwater level is already rising and will continue to rise due to the amount of land that has already been cleared in the catchment. The proposed clearing on Location 6783 is predicted to increase the rate at which the groundwater level will rise and increase salinity if farm management procedures are not successful.

The EPA's objective in regard to this environmental factor is to "ensure that clearing does not result in changes in groundwater levels that could lead to salinity".

In addition to this objective the EPA has an important role to play in the implementation of the Salinity Action Plan. Salinity has been identified as one of the State's most critical environmental problems. The Salinity Action Plan states that remnant vegetation protection and management will be a significant component of salinity control systems.

The EPA notes that:

(a) the groundwater level is currently rising by approximately 200mm per year in the catchments in which Location 6783 is situated and will continue to rise at this rate;

(b) there is no overall catchment management strategy in place to attempt to halt the rise;

(c) the proposed land clearing represents 3% of the catchment and is large enough to affect recharge. The proposed land clearing may increase the rate at which groundwater level below the property rises by a further 6 mm per year.

(d) the Commissioner of Soil and Land Conservation has advised that the proposed clearing will not cause land degradation to impact on future agricultural landuses; and

(e) rising groundwater and increasing salinity resulting from the proposed land clearing may impact on nature conservation values in other parts of the catchment, including the Stirling Range National Park.

Having particular regard to:

(a) the current rate at which groundwater levels are rising in the catchments in which Location 6783 is situated;

(b) the advice from AgWA that the proposed clearing may increase the rate at which groundwater level below the property rises; and

(c) the likelihood that the rising groundwater will lead to increasing salinity and this will impact on nature conservation values in other parts of the catchment, including the Stirling Range National Park,

The EPA concludes that:

(a) the rising groundwater levels and increasing salinity in the catchment are likely to impact on native vegetation; and

(b) there is an unacceptable risk that the proposed clearing on Location 6783 will contribute to these problems of rising groundwater levels and increasing salinity.

The proposal relies heavily on the successful implementation of farm management procedures to prevent an increase in salinity. In general the EPA does not support land clearing in catchments where (i) groundwater is already rising at a substantial rate, (ii) salinity is evident

and (iii) there is no overall catchment management strategy in place to attempt to halt the rise in groundwater levels.

The proposal relies heavily on the implementation of successful farm management procedures to prevent an increase in water levels and salinity in a catchment where wetlands are already affected by rising water levels and salinity. There is no evidence to suggest that these management procedures will work and if they were not implemented by the proponent or were unsuccessful there may be an unacceptable impact on wetlands from an increase in groundwater levels and salinity.

It is the EPA's opinion that it is unlikely that the objective for this relevant factor would be met if native vegetation on Location 6783 was cleared. For the EPA's objective to be met no further vegetation should be cleared within the catchments in which Location 6783 is located. Given the rising water table, action to arrest this increase also needs to be taken.

3.3 Wetlands

Aspects of wetlands

Advice from a number of agencies has been provided:

Department of Environmental Protection
There are a number of small Yate swamps located in the south east corner of Location 6783 as well as on the adjoining property to the east (Appendix: Figure 1b). Surface expression of salinity can be seen in these Yate Swamps near the property. (Document 4: Attachment 3).

Agriculture Western Australia
The groundwater level is rising and will continue to rise due to the amount of land that has already been cleared in the catchment. The wetlands near Location 6783 act as evaporation pans, salinity will increase in these wetlands as the groundwater level continues to rise. Further clearing may increase groundwater levels and compound the salinity problem in these wetlands. (Document 4: Attachment 2).

It is considered that the majority of the groundwater in the regional aquifer passes through the depressions near Location 6783 and eventually enters the large salt lake situated to the east within the Stirling Range National Park. Rising groundwater levels and salinity in the catchment will impact on this wetland (Appendix 1: Figure 1b).

Agriculture Western Australia has advised that additional runoff and groundwater recharge from the proposed clearing will be minimised if the native vegetation surrounding the wetlands on Location 6783 is not cleared. The proponent has advised that the native vegetation surrounding the wetlands will be retained (Document 4: Attachment 2).

Commissioner of Soil and Land Conservation
The Commissioner has advised that wetlands near Location 6783 have suffered substantial vegetation decline (death of *Eucalyptus occidentalis*) since clearing, due to rising groundwater tables and increasing salinity in the root zone. It is predicted that further clearing may increase salinity and further impact on the environment values of the wetlands.

The Commissioner has also advised that the eutrophication potential of the wetlands as a result of the proposed clearing on Plantagenet Location 6783 is considered to be extremely low due to high phosphorus retaining ability of the soils (Document 4).

CALM
CALM has expressed concern at the likely impact that the proposed clearing may have on Pillenorup Swamp located within Stirling Range National Park. This wetland is of special

interest as it is one of only two semi permanent, unwooded, freshwater wetlands within the Park. No habitat of this quality is known south of the park in private property wetland (Document 4: Attachment 2). However, Ferdowsian has advised that the clearing is not likely to impact on Pillenorup Swamp (Document 4: Attachment 4).

Water and Rivers Commission
The WRC has advised that wetlands in the catchment are already suffering from the effects of increased salinity and the clearing proposal is likely to exacerbate this situation. Changes in hydrology may cause further decline in the condition of the vegetation around the wetlands in the catchment (Document 5).

Assessment

The area considered for assessment of this relevant environmental factor is the catchments for the local (10,000 ha) and regional aquifer in which Location 6783 is located.

The EPA's objective in regard to this environmental factor is to "protect the environmental values and maintain or enhance key ecological functions of the wetlands."

In addition to this objective the EPA is also aware of its responsibility to implement the Salinity Action Plan. The Action Plan states that more than 80% of stream riparian zones are seriously degraded by salinity. An aim of the Action Plan is to protect and restore high value wetlands and maintain natural diversity within the agricultural areas of the State.

The EPA notes that:

(a) the proposed land clearing represents 3% of the catchment and is large enough to affect recharge;

(b) the Commissioner of Soil and Land Conservation has advised that groundwater levels and salinity will continue to increase as a result of vegetation that has already been cleared in the catchment.

(c) rising groundwater levels and increasing salinity are impacting on the environmental values of the wetlands within the catchment;

(d) the proposal may further impact on groundwater levels and water quality in the wetlands, particularly the wetland located to the east of Location 6783 in the Stirling Range National Park;

In relation to the proposal the EPA also notes that:

(c) the native vegetation around the wetlands in the south east corner of Location 6783 will be retained to minimise stormwater runoff and recharge; and

Having particular regard to the:

(a) rate at which groundwater levels are rising in the catchments in which Location 6783 is situated;

(b) likelihood that the proposed land clearing may increase groundwater levels and salinity in the wetlands within the catchments;

(c) absence of a catchment management plan to reverse the trend of rising groundwater levels in the catchments; and

(d) adverse impact that the rate at which groundwater levels and salinity are already increasing is likely to have on the nature conservation values of wetlands and riparian vegetation.

The EPA concludes that there is:

(a) sufficient evidence to suggest that water quality in wetlands will continue to decline and water levels will continue to rise; and

(b) an unacceptable risk that the proposed clearing will contribute to these problems.

The proposal relies heavily on the implementation of successful farm management procedures to prevent an increase in water levels and salinity in a catchment where wetlands are already affected by rising water levels and salinity. There is no evidence to suggest that these management procedures will work and if they were not implemented by the proponent or were unsuccessful there may be an unacceptable impact on wetlands from an increase in groundwater levels and salinity.

It is the EPA's opinion that the proposed clearing may increase groundwater recharge and compound the spread of salinity in wetlands within the catchment and is likely to compromise the EPA's objective to protect the environmental values and maintain or enhance key ecological functions of the wetlands. For the EPA's objective to be met no further vegetation should be cleared within the catchment in which Location 6783 is located. This objective may not be met if the water table continues to rise. Action needs to be taken to arrest this increase at a catchment level.

4. Recommendations

The EPA submits the following recommendations:

Recommendation

1. That the Minister for the Environment considers the report on the environmental factors of Water (Section 3.2) and Wetlands (Section 3.3) and the EPA objectives

2. That the Minister for the Environment notes that it is the EPA's opinion that the proposal as presented is unlikely to meet the EPA's objectives in relation to:

   (a) Water; and
   (b) Wetlands

3. That the Minister for the Environment notes that the EPA has not considered the environmental factors of:

   (a) Declared Rare and Priority Flora;

   (b) Specially Protected (Threatened) Fauna; and

   (c) Vegetation communities

   because there is presently insufficient information on each of them.

4. That enough is known about the factors Water and Wetlands for the EPA to form the opinion that the proposal can not meet the environmental objectives and thus should not proceed. The EPA has decided that additional information about the remaining factors is not required unless the Minister for the Environment determines that the assessment of these remaining factors was required before a decision on the proposal could be made.

5. That the Minister for the Environment note that if further assessment of the proposal is necessary so as to report on all of the environmental factors set out in Section 3.1, the following surveys would need to be undertaken with further advice being sought from the EPA:

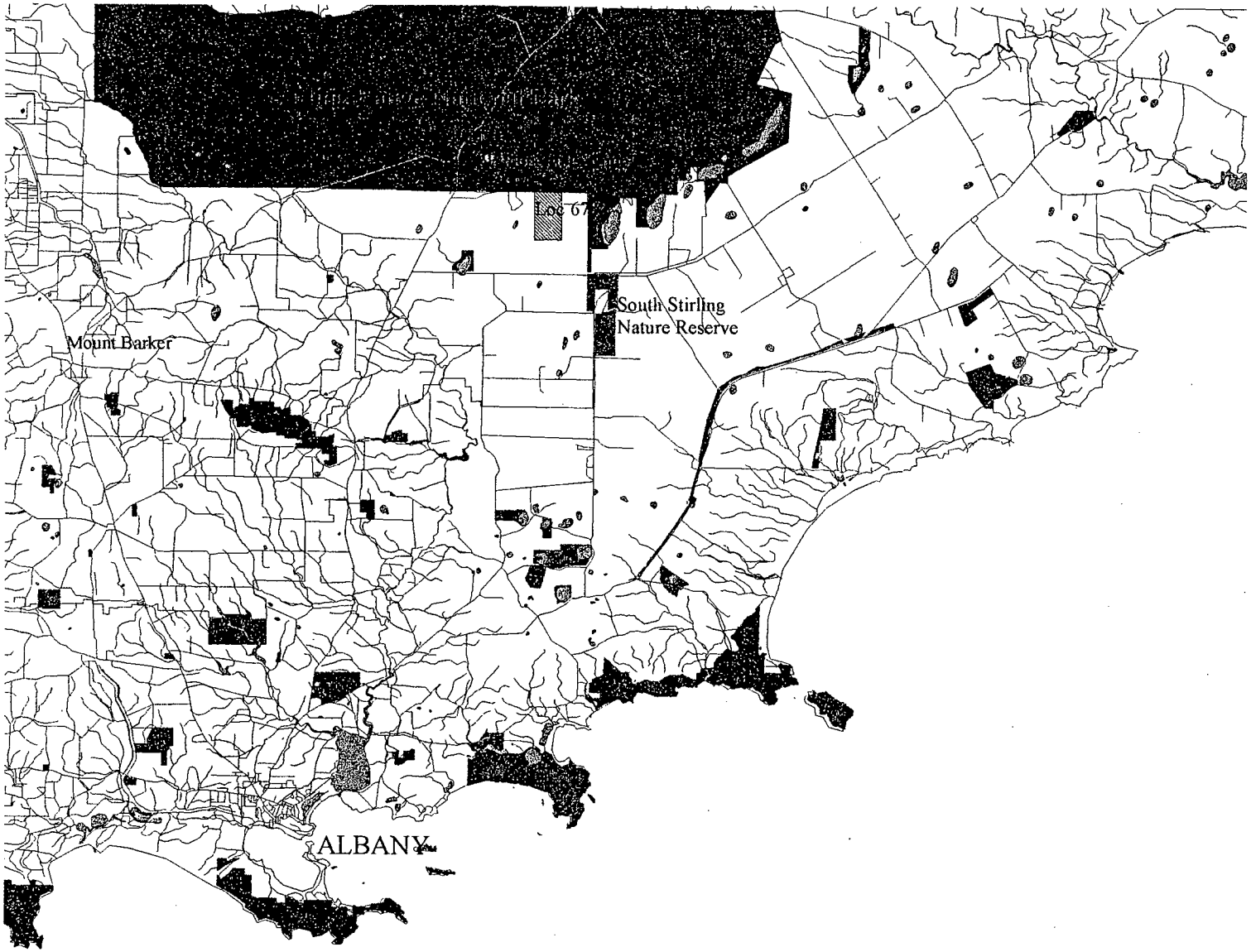
(a) a botanical survey to determine if there are DRF, Priority flora or rare plant communities present in those areas of Location 6783 proposed to be cleared;

(b) a survey to determine if there are vegetation communities on Location 6783 which do not have 20% of their original occurrence represented in NPNCA National Parks, Nature Reserves or other Crown land and Remnant Vegetation Protection Scheme covenants within a 15 km radius of Location 6783 of the property; and

(c) a fauna survey is required to determine if there are rare or threatened fauna species reliant on those areas proposed to be cleared.

Appendix 1

Figures 1a and 1b


Loc 67
South Stirling
Nature Reserve
Mount Barker
ALBANY
Major Water Bodies
Drainage lines (WA)
CALM Managed Land
Section 5G Reserve
Conservation Park
Leasehold
Marine Park
National Park
Nature Reserve
State Forest
Roads (WA)
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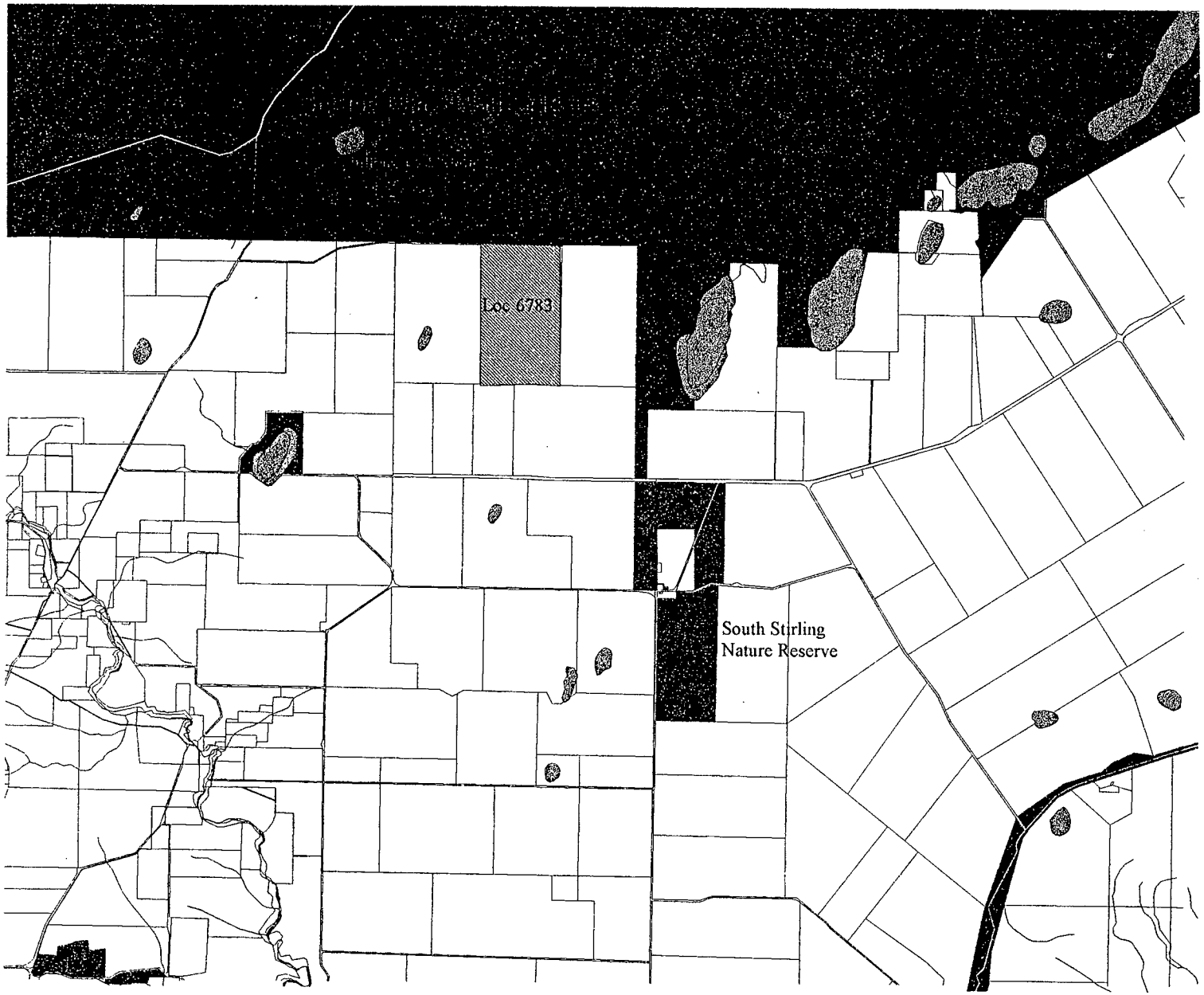
Department of Environmental Protection, Western Australia



Major Water Bodies
Drainage lines (WA)
CALM Managed Land
Section 5G Reserve
Conservation Park
Leasehold
Marine Park
National Park
Nature Reserve
State Forest
Cadastral Boundaries
Local Government Authority Boundaries

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Department of Environmental Protection, Western Australia

Appendix 2

Table 1

Relevant Factor	Environmental Objective	Government agency comments	Summary of DEP Recommendation
Water (salinity)	•Ensure that clearing does not result in changes in groundwater levels that could lead to salinity.	•The whole region is experiencing increasing salinity and rising water tables.(J Craig)	•Rising groundwater levels are likely to impact on native vegetation.
		•The groundwater level is rising by approx 200mm/year.(AgWA)	•There is an unacceptable risk that the proposed clearing on Location 6783 will contribute to the rate at which groundwater is rising.
		•The proposed clearing will have a 3% impact on the rate groundwater rise/year or 6mm per year.(AgWA)	•It is unlikley that the objective of the EPA for this relevant factor would be met if native vegetation on Location 6783 was cleared.
		•Surface expression of salinity can be seen in the Yate Swamps near the property. These swamps are a groundwater discharge points and clearing may compound the salinity problem.(AgWA)	•For the EPA's objective to met no further vegetation should be cleared within the catchments in which location 6783 is located.
		•Some of the potential salinity on the adjoining property is due to clearing and present management. These problems would be compounded if excessive clearing occurs on Loc 6783 (AgWA).	
		•Eventually large areas of the adjoining property (Loc 6784) to the east and the lake within the National Park will become salt affected. (J Craig)	
		•Salinity is increasing in the wetlands in the area. Clearing may further compound these problems. (AgWA)	
		•Management of the subcatchment will dictate the extent of salinity. (AGWA)	
		•There is no evidence to suggest that the management proposed by the owner and AgWA is likley to counteract the effect of clearing deep rooted vegetation (WRC).	
Wetlands	Protect the environmental values and maintain or enhance key ecological functions of the wetland.	•The main discharge site for the aquifer in this area is a salt lake 4km to the east in the Stirling Range National Park AgWA).	•There is sufficient evidence to suggest that water quality in wetlands will continue to decline and water levels will continue to rise.
		•Yate swamps occur in the south east part of Loc 6783 (J Craig).	•There is an unacceptable risk that the proposed clearing will contribute to these problems.
		•Nearby swamps have suffered substantial vegetation decline since clearing.(AgWA)	•The proposed clearing may increase groundwater recharge and compound the spread of salinity in wetlands within the catchment and is likely to compromise the EPA objective.

		•Eutrophication potential on this site is considered to be extremely low due to high PRI levels.	•For the EPA's objective to be met no further vegetation should be cleared within the catchment in which Location 6783 is situated.
		•Salinity may increase in a salt lake located 4km to the east of Loc 6783 in the Stirling Range National Park. (AgWA)	
		•AgWA has advised that the landclearing will cause groundwater levels to rise and compound salinity in wetlands.	
		•The proposed clearing is likley to exacerbate the salinity problem. Changes in hydrology may cause further decline in the condition of the vegetation around the wetlands in the catchment.	
Declared Rare and Priority Flora	Protect Declared Rare and Priority Flora, consistent with the provisions of the Wildlife Conservation Act 1950.	•Based on nearby occurences on similar soil three declared rare flora, four Priority 1 species and eight Priority 2 species may occur on the property (J Craig).	•A botanical survey is required before the proposal can be adequately assessed by the EPA to determine if there are DRF or Priority flora present in those areas of Location 6783 proposed to be cleared.
		•The wetlands area is not being cleared where one of the DRF species may occur.(CALM).	•Without a botanical survey there is an unacceptable risk that the proposed clearing may endanger species of DRF or Priority flora that may be located on the property and compromise the EPA's objective.
		•CALM found no DRF on the property during an inspection.(CALM).	
		•A detailed botanical search has not undertaken.(AgWA)	
Declared Rare Fauna	•Protect Declared Rare or threatened fauna, consistent with the provisions of the Wildlife Conservation Act 1950.	•Three species of fauna classified as rare likely to become extinct may be on the property including the Western Mouse, chuditch and white tailed black cockatoo.(J Craig)	•A fauna survey is required before the proposal can be adequately assessed by the EPA to determine if there are species of fauna identified as rare or threatened on the property.
	Ensure the abundance, diversity, geographical distribution and productivity of faunal communities are protected.	•A detailed fauna survey would be required to adequately determine the likely impact of clearing.	•Without a fauna survey there is an unacceptable risk that the proposed clearing may endanger fauna identified as rare or threatened and compromise the EPA objectives.
Vegetation communities	Maintain the abundance, diversity, sustainability, geographic distribution and productivity of vegetation communities.	•The property comprises a rich and floristically diverse sandplain flora. Although a detailed flora study would be required to determine this issue further.(AgWA)	•The proposed clearing may adversely impact on: rare vegetation communities with high species diversity; vegetation communities that support rare flora and fauna and compromise the EPA's objective in relation to these species and conservation values.

		•The existing vegetation does not form a viable corridor although it has value as a stepping stone for fauna between major reserves (J Craig).	•A botanical survey is required before the EPA can adequately determine if adequate representation of vegetation communities within a 15 km radius will be maintained and whether rare vegetation communities will be protected.
		•There is no dieback evident on the property. (AgWA)	•The proposed clearing will significantly impact on the conservation values of native vegetation on Location 6783.
		•The Stirling Range National Park which is nearby is heavily infected with dieback. (AgWA)	•For the EPA's objectives to be met in relation to maintaining and protecting vegetation conservation values no further vegetation on Location 6783 should be cleared.
		•The value of the vegetation on the property is increased because it is isolated and disease free. (AgWA)	
		•The existing vegetation is in excellent condition and almost completely weed free. (AgWA)	
		•Weed invasion from the cleared land is not expected.(AgWA)	
		•Native vegetation that is retained should be fenced off before grazing. (AgWA)	
		•The property contains significant communities of proteaceous heath. (AgWA)	
		•A comparison of vegetation types with nearby reserves has not been conducted.(AgWA)	
		The proposed land clearing may cause salinity in the salt lake in the national park to spread. This will impact on native vegetation communities within the National Park.	

Appendix 3

References

Agriculture Western Australia. (1997). *Land Assessment Report.*. Agriculture Western Australia. Albany, WA.

Commissioner of Soil and Land Conservation. (1997). *Report from the Commissioner.* Agriculture Western Australia. Perth, WA.

Craig, J. (1996). *Property Report Form.* Department of Environmental Protection. Perth, WA.

Government of Western Australia. (1996). *Western Australian Salinity Action Plan.* Western Australian Government. Perth, WA.

Ferdowsian, R; McFarlane, D J and Ryder, A T. (1996). *Wetlands on tertiary sandplains need to be managed to reduce secondary salinity.* 4th National Conference and Workshop on the Productive Use and Rehabilitation of Saline Land 25-30 March 1996. Albany, WA.

Document 2

DEPARTMENT OF AGRICULTURE
WESTERN AUSTRALIA

Your Ref: 951236V01P0E
Our Ref: Andrew Watson
Enquiries: 19 February 1996
Date:

Chief Executive Officer
Department of Environmental Protection
Westralia Square Building
141 St George's Terrace
PERTH WA 6000

20 FEB 1996
77/96 GW1

Attention: Ms E Bunbury

NOTICE OF INTENT TO CLEAR - PLANTAGENET LOCATION 6783

The Commissioner requests the Department of Environmental Protection to amend the list of properties brought to your attention, to now include the attached Notice of Intent to Clear Land (NOI).

The NOI was submitted by Graham Davies to clear approximately 300 hectares within Plantagenet Location 6783. The property is located on Branson Road, 70 km north east of Albany within the Shire of Plantagenet.

This proposal has been assessed by Jill Lisson of the Albany District Office who has recommended that there be no objections to the clearing of 318.8 ha, as delineated on the attached plan and subject to an area of 518 ha being retained and protected by an Agreement to Reserve with the Commissioner. Mr Davies has agreed to enter into an agreement with the Commissioner.

The property has been inspected by the Department of Conservation and Land Management and a copy of their report is attached for your information.

Would you please advise the Commissioner within 30 days whether there are any objections to the proposed clearing. If there is no response from you it will be assumed there are no objections to the proposal.

Thank you for your assistance. If you wish to discuss this matter further please contact Andrew Watson on 368 3650 or Jill Lisson on (098) 420 500.

Yours sincerely

033352

John Duff
DEPUTY COMMISSIONER OF SOIL AND LAND CONSERVATION

Enc.

Document 3

Received 30/10/95
[illegible signature]

SOIL AND LAND CONSERVATION ACT 1945

[Regulation 4 (2)]

NOTICE OF INTENTION TO CLEAR LAND

Spoke to KS on 8/11/95 re. DEP he will send assessment ASAP. [illegible initials] 3/[illegible]

Return To: **Commissioner of Soil Conservation**
Department of Agriculture
Baron-Hay Court
SOUTH PERTH W.A. 6151

OR your local Department of Agriculture

I GRAHAM ROSS DAVIES (full name, block letters)

of 14 MIDDLETON RD ALBANY WA. 6330 (postal address)

intend to clear about 300 – 400 hectares of land

in the Shire of PLANTAGENET

Soil Conservation District STIRLINGS LCDC

comprising GRAVEL & LOAMY SANDS CARRYING MALLEE, CHITTICK, BLACKBOY

(state soil type and type of vegetation)

on Location Number 6783 (see plan attached)

in the PLANTAGENET Land District

70 kilometres NORTH EAST (north, south, east or west)

of ALBANY ~~siding~~ or townsite

commencing on or about JAN 1996

total area of location 1182 HA.

area cleared at present 362 HA

LAND OWNED BY ALDIS NOMINEES P/L AS TRUSTEE FOR IAN DAVIES FAMILY TRUST

I am the owner/~~lessee~~* of this land. (* Delete word not applicable)

Signed G Davies   Date 20 – 10 – 95

Telephone 098 413336 HOME
098 542024 FARM

Plan to be drawn (attached) to show position of the land to be cleared. Roads and numbers of adjoining locations are to be shown where possible.

30/10/95 Sent to HQ

41

LT. 37

ORIGINAL—NOT TO BE REMOVED FROM OFFICE OF TITLES

Transfer F4322

Volume 1551 Folio 520

WESTERN AUSTRALIA

REGISTER BOOK VOL. FOL. CT 1942 814

CERTIFICATE OF TITLE

UNDER THE "TRANSFER OF LAND ACT, 1893" AS AMENDED

814 FOL. 1942 VOL. Page 1 (of 2 pages)

I certify that the person described in the First Schedule hereto is the registered proprietor of the undermentioned estate in the undermentioned land subject to the easements and encumbrances shown in the Second Schedule hereto.

Dated 5th October, 1992

REGISTRAR OF TITLES

ESTATE AND LAND REFERRED TO

Estate in fee simple in Plantagenet Location 6783, delineated on the map in the Third Schedule hereto, limited however to the natural surface and therefrom to a depth of 12.19 metres.

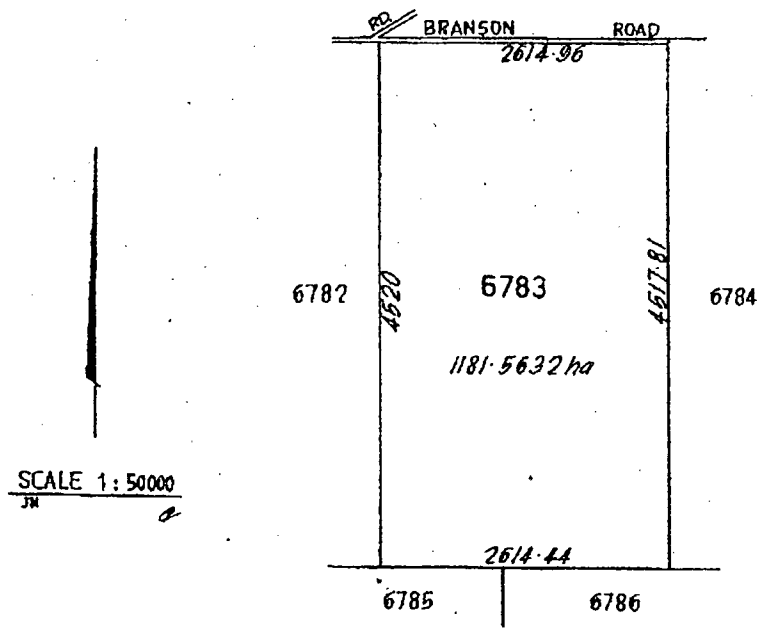
FIRST SCHEDULE (continued overleaf)

Aldis Nominees Pty. Ltd. of 14 Middleton Road, Albany.

SECOND SCHEDULE (continued overleaf)

1. MORTGAGE F4323 to Westpac Banking Corporation. Registered 5.10.92 at 8.45 hrs.

THIRD SCHEDULE



PERSONS ARE CAUTIONED AGAINST ALTERING OR ADDING TO THIS CERTIFICATE OR ANY NOTIFICATION HEREON

NOTE: ENTRIES MAY BE AFFECTED BY SUBSEQUENT ENDORSEMENTS.

AGREEMENT TO RESERVE

SOIL AND LAND CONSERVATION ACT

SECTION 30

File : 951236V01POE

The registered proprietors, **Aldis Nominees Pty Ltd** of that land described as **Plantagenet Location 6783** on the Certificate of Title Volume 1942 Folio 814 ; recognise the value of sound land management practices and the value of protecting areas within the land described on this plan.

The proprietors agree with the Commissioner of Soil and Land Conservation that to promote land conservation this area of land be reserved under Part IVA. Section 30 (B) of the Soil and Land Conservation Act 1945, under the following conditions :

We : ALDIS NOMINEES PTY LTD
(Proprietors of the Land)

Of : 14 MIDDLETON ROAD
ALBANY WA 6330
(Normal Postal Address)

Agree to retain 589 hectares in perpetuity as shown on this plan as fenced areas, cross hatched brown and being partly within **Plantagenet Location 6783**

The area of land described above is to be adequately fenced prior to the introduction of stock and managed in such a way as to retain and promote the growth of native vegetation.

DIRECTOR :..... DATE :...../...../ 1996

DIRECTOR :..... DATE :...../...../ 1996

COMPANY SECRETARY :..... DATE :...../...../ 1996

COMPANY [illegible]

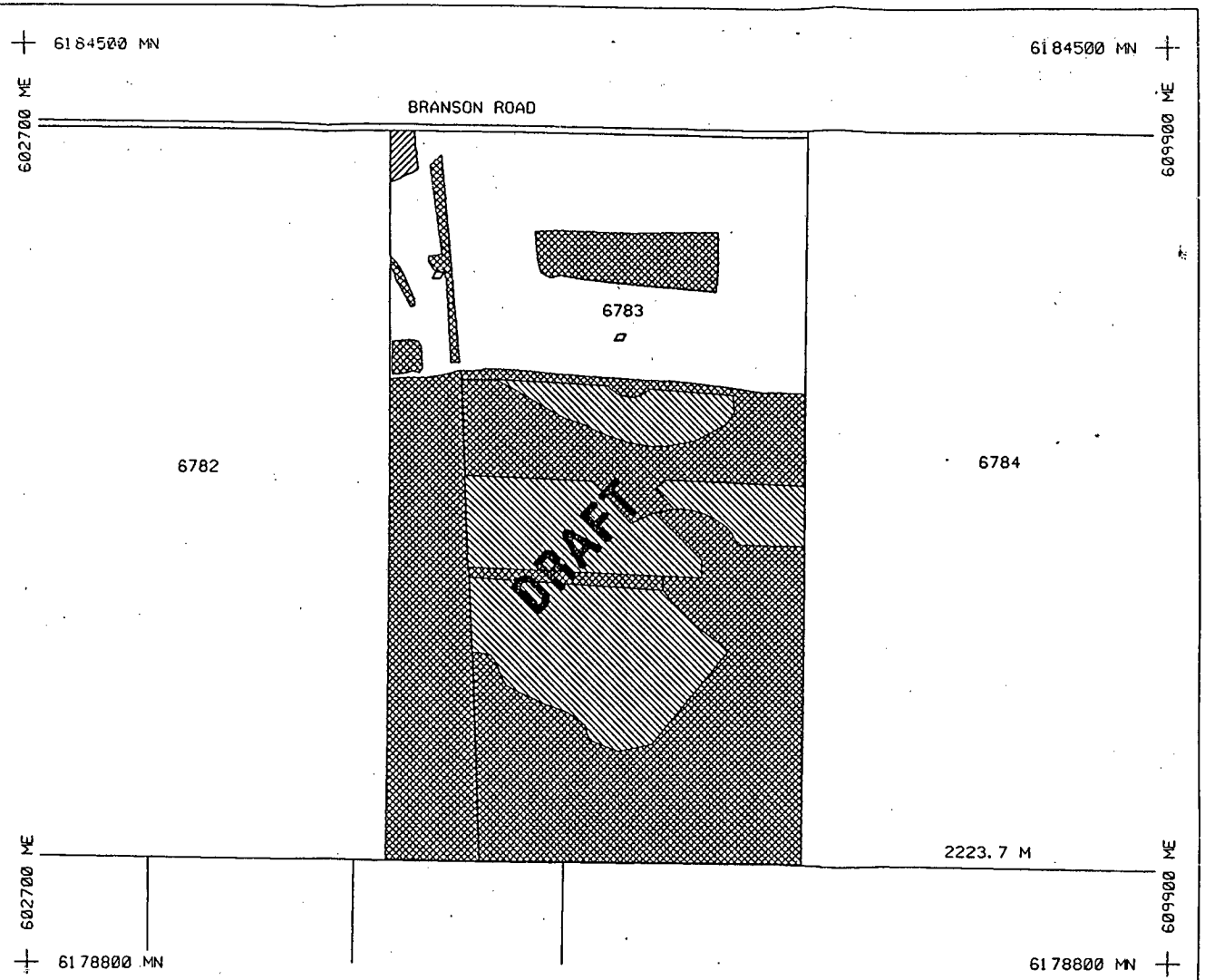
(AN AGREEMENT TO RESERVE IS REGISTERED AS A MEMORIAL ON THE CERTIFICATE OF TITLE)

:..... DATE :...../...../ 1996

COMMISSIONER OF SOIL AND LAND CONSERVATION

DRAFT

DRAFT



LEGEND:

- VEGETATION : 4.5 HA. 0.4%
- AREA OF NO OBJECTION TO CLEARING : 248.6 HA. 21%
- AREA TO BE RETAINED AND PROTECTED AS NATIVE VEGETATION : 589 HA. 50%
- EXISTING INTERNAL FENCING
- SURVEYED BOUNDARIES
- ROADS
- WATERWAYS
- DAMS
- SWAMPS

AREA OF LOCATION - 1181.5632 HA
AREA OF REMAINING VEGETATION - 593.5 HA. 50%
AREA CLEARED - 588.0632 HA. 50%

METRES
0 600 1200 1800 2400 3000
ORIGINAL SCALE 1:30 000

NOTE: 1. ALL MEASUREMENTS AND AREAS ARE ONLY APPROXIMATE AND SUBJECT TO ON-SITE ASSESSMENT BY A LAND CONSERVATION OFFICER FROM AGRICULTURE W. A.
2. DIGITIZER SET UP AVERAGE ERROR -
3. DOLAR CAPTURE SCALE OF CADASTRE 1 : 50 000
4. CAPTURE SCALE OF VEGETATION 1 : 25 000
5. DETAILS OF AERIAL PHOTOGRAPHY - 3221 MT BARKER RUN 14
6. AMG ZONE - 50 606000 ME , 6182000 MN 2529 III PLAN.DGN

D. BODEKER
DRAWN BY :..... DATE :...../...../ 1996

D. STANTON
CHECKED BY :..... DATE :...../...../ 1996

96ALDN2.ATR 12 DECEMBER 1996 FILE NO 951236V01POE

D:\user\dgn\donald\96aldn2.atr Dec. 13. 1996 09:41:43

Document 4

REPORT FROM THE COMMISSIONER

FROM: COMMISSIONER OF SOIL AND LAND CONSERVATION

TO: CHAIRMAN, ENVIRONMENTAL PROTECTION AUTHORITY

RE: Aldis Nominees, Plantagenet Location 6783, Shire of Plantagenet

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This document supplies information relevant to the formal assessment of the proposal.

1.0 Method of Assessment

Notice of Intention (NOI) to clear 300-400 hectares of land on Location 6783, Shire of Plantagenet, was received from Aldis Nominees, soil, landscape and vegetation mapping of the area was consulted in a desk top study to determine key issues, and notification of the proposal was sent to relevant agencies, Shire of Plantagenet, and the Stirling Land Conservation District Committee. Following this an inspection of the site was conducted by an experienced land conservation officer. Subsequent inspections have been undertaken by CALM officers, and consultants working for the DEP on the development of clearing assessment procedures. An hydrological report has also been prepared for the property.

The Deputy Commissioner subsequently determined that he was "currently of the opinion that land degradation is not likely to result if this location is cleared and vegetation retained, according to the attached Agreement to Reserve".

2.0 Description of the environment

The property is located approximately 70kms north east of Albany, and just south of the Stirling Range National Park. The land slopes very gently to the south. Elongated sand dunes (Seifs - meaning sword like strips) pass through the location and are continuous through to Green range, 25kms to the south.

The area notified to be cleared is mallee-heath vegetation, with *Banksia* and *Lambertia* (chittick) on the sandier ridges, and small areas of Flat Topped Yate in the low lying depressions and swamps. Parts have been roughly cleared in the past, and since regrown to near-original conditions. The property has surface and groundwater drainage to both the north and the south.

3.0 Identification of factors

The following factors have been identified as relevant to this proposal.

3.1 Regional processes

3.1.1 Water

From a regional assessment (Ferdowsian, 1996) groundwater trends in stagnant aquifers near the proposal are estimated to be rising by approximately 200mm per year, based on data collected since December 1988. Surface expression of salinity can be seen in Yate Swamps near the property. A hydrological report on the property prepared by Agriculture WA (Ferdowsian, 20/11/96) has outlined the risks associated with current and increased levels of clearing in the district, including waterlogging and raised salinity levels affecting "closed depressions" adjoining the property, and impacts on a salt lake some 4kms to the east, in Stirling Range Nation Park. Limited clearing, construction of interceptor drains and high water use phase cropping farming systems are suggested to limit the recharge that would occur on Location 6783 following clearing.

3.1.2 Soil

Although wind erosion is common in the area, and parts of the property have deep sand ridges, Agriculture WA assessing officers consider that if clearing is limited as set out in the ATR wind erosion hazards are "negligible" (Lisson and Shanhun, 12/7/96). Due to the flat terrain water erosion is not considered to be an issue.

3.1.3 Corridors/Buffers

The subject land does not form part of a corridor between significant areas of vegetation within 15kms. It does form part of a "stepping stone" between Stirling Range National Park and the South Stirling Nature Reserve, and as such clearing of the total area could decrease use by some species, such as White Tailed Black Cockatoos.

3.1.4 Aesthetics/Cultural

Information is not currently available on the extent to which the proposal would impact on landscape values, special physiological features, aboriginal sites, or heritage sites. The land is visible from the Stirling Range National Park, but if cleared it would not differ from the rest of the agriculture landscape.

3.2 Representation

3.2.1 Flora

The area comprises a rich and floristically diverse sandplain flora. Assessment by Craig, based on nearby occurrences on similar soil types, determined that three declared flora species (*Conostylis misera, Daviesia harveyi and Drakaea confluens*) could potentially occur on the land, along with four priority one flora, and eight priority two flora. Comment by CALM indicates that any *Conostylis misera* occurrence would be in the swampier ground which is not to be cleared in the current proposal.

3.2.2. Plant Communities

While the property contains significant communities of proteaceous heath, comparison of vegetation types with nearby reserves has not been conducted.

3.2.3 Diversity

Detailed flora and fauna survey would be required to further determine this issue.

3.2.4 Wetlands

Nearby swamps have suffered substantial vegetation decline since clearing (death of *Eucalyptus occidentalis*). Hydrological examination has shown a salinity risk is present for depressions and swamps in the locality, and for a salt lake 4 kilometers to the east, in the Stirling Range National Park (Ferdowsian, 1996).

3.25 Regional representation

Comparison of vegetation types with nearby reserves has not been conducted. Outline the extent to which the proposal would reduce to less than 20% the amount of any vegetation community remaining within 15kms (or lack of current information to adequately assess).

3.2.6 Wildlife

Comparison of soil and vegetation types fauna knowledge for the Stirling Range National parks suggests that the western mouse could occur in heathland taller shrubland on gravely and clayey soils. This habitat is present on the property in question. Additionally, it is understood that White Tailed Black Cockatoos make use of the area for feeding. Detailed fauna survey would be required to further determine this issue.

3.2.7 Habitats

In the absence of more detailed flora and fauna studies, any significant impacts have not been identified.

3.3 Viability

3.3.1 Area and shape

The uncleared land in question is essentially a large square in shape. The proposed clearing pattern, while it will retain substantial areas of vegetation, will drastically increase the edge impacts on the remaining vegetation, making it less viable over time.

3.3.2 Intactness

The vegetation is in excellent condition. The land is intact apart from a number of tracks which have been recently cut through the cleared vegetation. Parts of the land have been roughly cleared in the past, but have substantially regrown to near original condition.

3.3.3 Diseases and pests

No significant plant diseases, such as dieback (PhytoptheTra spp.) appear to be present. This increases the value of the vegetation as an isolate, with the nearby Stirling Range National park being extensively infected with the disease.

3.3.4 Invasive plants

The existing vegetation is almost completely free of invasive weeds. Significant spread of invasive weeds from the cleared to the uncleared land is not expected.

3.3.5 Adjacent uses

The surrounding land uses are currently all agricultural, with the only impact from the clearing likely to be small increases in water table rise and subsequent salinity as outlined earlier.

4.0 Consultative processes

There have been numerous contacts and discussion made relative to this proposal, both with the proponent and with other interested parties. They are summarized in the table.

30/10/95	Notice of Intent submitted
30/10/95	Site inspection conducted by land conservation officer, in conjunction with owner
15/12/95	CALM officers inspect site, in conjunction with owner
19/2/96	DEP notified of proposal
19/2/96	Letter of objection from Deputy Commissioner to proponent halts proposal while further information is collected
April 1996	EPA sets formal level of assessment
30/5/96	Proponent meets with EPA
7/6/96	Chairman EPA and Agriculture WA Land Conservation Officer meets landholder on site
27/6/96	DEP consultants inspect site and prepare report as part of constancy to define firm evaluation criteria relevant to this and similar proposals
20/11/96	AgWA Research Hydrologist provides overview report on the proposal
19/12/96	Deputy Commissioner informs EPA that he is "currently of the opinion that land degradation is not likely to result if the locations is cleared..... according to the attached ATR".

5.0 Evaluation of proposal

Current hydrological advice is that salinity may be manageable if clearing was restricted to certain areas, as set out in the attached draft Agreement to Reserve, and if ongoing management conditions reducing the expected impacts are adhered to by the proponent.

References

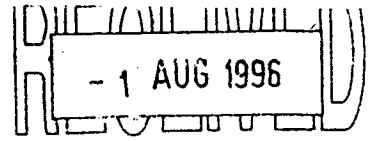
Ferdowsian, R., McFarlane, D J, Ryder, A T., *Wetlands on tertiary sandplains need to be managed to reduce secondary salinity*, in proceedings of the 4th National Workshop on the productive use and Rehabilitation of Saline Lands., March 1996.

Attachments

The following documents were received during assessment by the Commissioner.

Attachment 1	Land Assessment Report completed by Agriculture WA Land Conservation Officer
Attachment 2	Agriculture WA Hydrology report
Attachment 3	Property Report Form completed by DEP consultant
Attachment 4	Written advice from CALM

Document 4: Attachment 1



File: 951236
File: ARO 668/95

Date 12 July 1996

Commissioner of Soil and Land Conservation
Agriculture Western Australia
Baron-Hay Court
SOUTH PERTH WA 6151

Agriculture Western Australia
P.O. Box 1231
Bunbury
W.A. 6231

LAND ASSESSMENT REPORT - Graham Ross Davies
LOCATION - Plantagent 6783

1. SUMMARY & 2. INTRODUCTION

The landholder has submited an NOI to clear approximately 300-400 ha. This land was subject to a previous NOI when it was owned by a Mr Branson. Kevin Shanhun was involved in an interim assessment. However as the location was to be sold the application was withdrawn.

This property is situated just south of the Stirling Range National Park and has been subject to an inspection from officers of the Albany Regional Office. The Stirling LCDC and CALM have been notified and have responded to Albany office. Inspection has shown that approximately 320 ha of land is suitable to clear under the current clearing guidelines. (See section 8).

All relevant information has been forwarded to the Statutory Controls Group and is currently on file. As the area notified to be cleared was 300 - 400 ha, the NOI was directed to DEP for comment. The EPA have inspected the site and are currently preparing draft Consultative Environmental Review guidelines for all clearing assessments referred to the DEP. This NOI is being used as a case study for this process.

3. LANDHOLDER DETAILS:

3.1	Full name(s):	Graham Ross Davies
3.2	Company name:	Aldis Nominees Pty Ltd
3.3	Postal Address:	14 Middleton Rd Albany WA 6330
3.4	Telephone:	098 413336
3.5	Date notice was received:	30 October 1995

4. PROPERTY DETAILS

4.1 Land District: Plantagenet

4.2 Location Number: 6783

4.3 Proposed Land Use: Cropping initially, eventually some stocking

4.4 Agriculture WA Office: Albany

4.5 Shire: Plantagenet

4.6 LCDC Name: Stirling LCDC

4.7 Location from nearest centre: Approx.70 km North East of Albany

4.8 Map sheet: Noorubup 2528 IV & Chester Pass 2529 III
AMG ref: 6182000m N 606000m E
Aerial photography details: Mt Barker 1993 Run 14 5029, 5030
Run 15 5102, 5103

4.9 Average Annual Rainfall: 450 mm

4.10 Other Aspects

Location within a WRC Controlled Catchment	No
Location within the Peel Harvey Catchment	No

4.11 Plans/Documents attached: -All plans, documents, written correspondence in on file in the South Perth office

5. INSPECTION DETAILS:

5.1 Assessment type: Clearing Assessment

5.2 Date of property inspection: 30 November 1995

5.3 Name of inspecting Officer(s): Kevin Shanhun - Albany RLCO
Jillian Lisson - Albany LCO
Graham & Sybil Davies - Landholders

6 AREAS (CONTIGUOUS HOLDING)		% of Property
6.1 Current cleared area:	**1223 ha**	**50%**
6.2 Current uncleared area:	1233 ha	50%
6.3 Area already fenced:	ha	%
6.4 Area notified	300-400 ha	16%
6.5 Area to be cleared:	**320 ha**	**13%**
6.6 Remnant vegetation (unprotected)	**ha**	**%**
6.7 Area already protected (SCN, ATR, CC,):	**Nil**	**0%**
6.8 Area to be protected (ATR)	**519 ha**	**21%**
TOTAL AREA OF PROPERTY	**2456 ha**	**100%**

The Notice of Intent is for Plantagenet Location 6783 (total of 1182 ha, 839 ha is remnant vegetation), and the landholder owns the adjacent property Plantagenet Location 6782 (total of 1274 ha, 400 ha remnant vegetation).

7. EXISTING VEGETATED AREAS	% Vegetated
Shire: *(Shire table - **RV + PUB** column).*	40.3 %
Sub-catchment: (confluence of 2 of the 1st well defined drainage lines)	%
Larger Catchment: (*eg Scott River*)	*>20%*
Property:	71%

8. LAND CAPABILITY, DEGRADATION AND MANAGEMENT ISSUES

8.1 Land capability

The area proposed for clearing consists mainly of mallee *Eucalypt spp,* other vegetation consists of *Banksia spp* and chittick on the sandy ridges, and *Melaleauca spp* and *Eucalyptus occidentalis* (Flat topped Yate) on the low lying depressions and swamps.

The slope of the land has a very gentle slope to the south, away from the Stirling Range National Park, with many pockets of land with minimal slope, and has shallow depressions and some seasonal swamps.
Soil types consisted of sandy gravels over clay to a depth of 20-30 cm, where clearing is proposed. The area consists of sandy ridges, and clay based swamps and depressions which have been identified as areas to be protected by way of an ATR,

8.2 Field assessment of land degradation

Both the landholder and the inspecting officers have identified the areas which are not suitable to clear and would result in degradation if cleared. These areas are identified as areas to be protected by an ATR.

The remaining areas which are suitable to clear, are at low risk of degradation
The severest land degradation hazard likely to affect the proposed clearing areas if they are developed for agriculture is salinity.

Risk of land degradation:

1. Wind erosion:-
Given the soil types present on this location, wind erosion hazards are considered negligible, given that large belts of remnant vegetation will remain even after taking into consideration individual management factors such as overgrazing or harsh climatic conditions such as below average annual rainfall.

2. Water erosion
Water erosion is not likely, the land identified to be cleared consists of flat to gently undulating slopes.

3. Eutrophication
Eutrophication potential on this site is considered to be extremely low, as the soil types are considered to have a high Phosphorous Retention Index and therefore readily able to adsorb nutrients and retain same in situ. Sufficent vegetation buffers have been identified to be maintained around the existing wetlands. In addition, there is very limited potential for water to transport soil and nutrients into major drainage systems, even from extreme rainfall events, due to the landform patterns in this area.

4. Salinity
It has been identified the the proposed clearing will have an impact on the groundwater tables of this area. This has recently been quantified by Ruhi Ferdowsian (Hydrogeologist, Albany Regional Office). As per previous correspondence forwarded to the Commissioner, the potential impact on the groundwater tables and hence salinity of the low lying swamps and land has been estimated.
Given that the property is above a stagnant aquifer and the area is estimated to be 10,000 ha, if 300 ha is to be cleared this will have up to a 3% impact on the rate of ground water rise per year. (This assumes agricultural practices undertaken do not utilized any of the annual rainfall).

A nearby borehole has shown that there is a rate of rise of the ground water of 20 cm per year, if the rate of rise is similar below Mr Davies property, the impact of the clearing could be an extra 0.6cm per year.
The quality of the groundwater is saline the estimates of salinity are given in Ruhi Ferdowsians report (> 10,000 mg/L TSS).

8.3 Management

PROPOSAL: Clearing land identified as suitable to clear as per the Land Clearing Guidelines.
INTENDED LAND USE: Cropping and eventually grazing.
POTENTIAL LAND DEGRADATION: Minimal as stated above in Section 8.2.

Mr Davies intends to use best management practices on his properties as per AgWA recommendations. Ie. Minimum tillage and stubble retention.

9. COMMENTS ON THE PROPOSAL

The issue of Nature Conservation has not been addressed and is one of the issues which DEP will be addressing within their guidelines.

10. CONCLUSIONS

The subject land has been identified as suitable to clear according to the current Land Clearing Guidelines. If acceptable under the DEP Clearing Guidelines, and provided the Commissioner accepts the impact of clearing on the groundwater table, it is recommended that this proposal be accepted. Out of 2456 ha of land in total on these two locations will remain some 913 ha (37 %) of indigenous vegetation, of which 513 ha (43.4 %) is subject to an ATR on Plantagenet Location 6783, the property relative to this particular NOI..

Dissen

DISTRICT LAND CONSERVATION OFFICER

REGIONAL LAND CONSERVATION OFFICER

Agriculture
WESTERN AUSTRALIA

3 BARON-HAY COURT SOUTH PERTH WESTERN AUSTRALIA 6151 PHONE: (09) 368 3282 FAX: (09) 368 3654

Our Ref : 951236VO1POE
Enquiries : Mr John Duff, Tel. (09) 368 3282
Date : 19 December 1996

FILE COPY

Mr Ray Steedman
Chairman
Enviromental Protection Authority
"Westralia Square"
141 St George's Terrace
PERTH WA 6000

Dear Mr Steedman

G. DAVIES - CLEARING PROPOSAL PLANTAGENET LOCATION 6783

Please find attached a copy of a Hydrologist's report on Mr Davies' Branson Road Notice of Intent to Clear. It is my understanding that this proposal is currently the subject of a CER.

Based on this report, and other advice received, I wish to advise that the Commissioner is currently of the opinion that land degradation is not likely to result if this location is cleared and vegetation retained, according to the attached Agreement to Reserve (ATR) plan. I have informed Mr Davies of this opinion and I enclose a copy of the letter to him for your information.

Mr Davies advised me that he had received a draft copy of a Consultative Environmental Review, however, he had not subsequently received any further advice. I suggest that written advice be provided to Mr Davies on the status of the CER.

If you have any further queries in regard to this matter, please do not hesitate to contact me on 368 3282.

Yours sincerely

John Duff
DEPUTY COMMISSIONER
SOIL AND LAND CONSERVATION

Att.

cc: Mr Davies

Mr Duff – Copy of Mr Ferdowsian assessment of the proposed land clearing. Note Pages 2 & 3.
27/11/96.

139

File 95/1236
Aldis Nominees

Commissioner of Soil and Land Conservation,
Agriculture WA,
South Perth
Attention: Andrew Watson

RE: Clearing on Plantagenet Location 6783, South Stirling, Mr. G.R. Davies property

Background

During 1994 and 1995, we studied a section of the sand plain that covers south and west of the Stirling Ranges and includes Location 6783. The study results were reported in the 4th National Conference on the Productive Use and Rehabilitation of Saline Land (Conference Proceedings,1996). That report explains geology, aquifers, recharge and the rising trend of groundwater levels in that area. Additional information have been obtained by interpreting 1993 coloured aerial photographs and 1:50,000 maps of the region that include Location 6783. My comments are as follows:

Site assessment

- The northern half of Location 6783 has shallow Tertiary silt and fine sand over granitic material. The aquifers in these areas are local. The local aquifers in these areas, flow eastwards into the northern parts of Location 6784 (Figure 1). The salinity problem in a local aquifer is on-site issue and management of the sub-catchments dictate the extent of their salinity. The depressions and floors of the areas which have local aquifers would eventually become salt-affected (Figure 1). The receiving areas for surface and groundwaters, are in Location 6784. These are closed depressions and swamps that would probably become salt-affected. These closed depressions would act as evaporation pans. While some of the groundwater may evaporate from the surface of these depressions, the bulk of groundwater would by pass these depressions and eventually enter a large Salt Lake that is further east (4km east; in National Park).
- The aquifer in the southern parts of Location 6783 is a regional one that extends east, west and south. This aquifer in most areas has full Tertiary Formation which includes a layer of coarse sand at depth. Although the coarse sand has high hydraulic conductivity, movement of groundwater is slow due to low hydraulic gradient. Thus the groundwater levels would continue to rise even after few discharge sites are formed.
- The floor level of the Salt Lake which is 4km further east, is between 150 and 160m (AHD). These levels are lower than the discharge sites which are 15km south-west of Location 6783 and close to the Kalgan River. Thus the main discharge site for the regional aquifer, in this area, is the Salt Lake.
- the regional aquifer has a low gradient and flows slowly towards the Salt Lake. As groundwater levels rise, top of the regional aquifer will intercept the depressions and change them to evaporation pans and salt-affected areas. Eventually large areas in Location 6784 and some areas in the National Park would become salt-affected.

- Some of the potential salinity on Location 6784 is due to clearing and the present management on that Location. These problems would be compounded if excessive clearing occurs in Location 6783.
- there is a closed depression in south-east of Location 6783. I feel this depression is a collecting and despatching point for the surface as well as groundwater that flows from west and north to east. Areas around and east of this sump should not be cleared to reduce runoff and recharge.
- Wind erosion is another problem in this area. There are elongated sand dunes (Seifs; meaning sword like strips) that pass through this Location and end up in Green Range which is >25 km south-east of Location 6783. Clearing of sand dunes and large blocks may cause wind erosion.

Suggestions

Based on the above arguments I support only limited and **conditional clearing**:

* Clearing should be subject to construction of well-designed interceptor drains to remove excess water and reduce recharge.
* While clearing, any land which is within the approved areas for clearing and has deep white sand should not be cleared.
* Continuous cropping will have continuous recharge. A phase cropping is the best management option to reduce recharge. In areas that have low rainfall and low rates of recharge (<40mm) farmers have managed to control the extent of soil salinity by phase cropping. Phase cropping is a rotation in which a few years of cropping (cereals or pulses) are followed by a few years of pasture (Lucerne and other perennial mixed with annual pasture) that in turn will be followed by cropping again. The rotational phases may be three years in areas of moderate to high rainfall or 4 to 5 years in areas that have low rainfall. During the cropping phase recharge will add moisture to the unsaturated soil profile. This storage will be used by Lucerne in the following phase. lucerne could be harvested for hay making if the land holder does not intend to have grazing animals. Phase cropping could reduce the rate of recharge to <10mm per year.
* The remaining bush specially the narrow strips would be easily deteriorated if stock has access to them. These areas should be fenced off before grazing.
* The silty soils of the area are very erodable. Protection against wind erosion is essential.
* I have used Jill Lisson's map to mark additional areas which should not be cleared (Figure 2).
* All areas that are marked (1) on Figure 2, should not be cleared for hydrological reasons (to reduce recharge, use surface runoff, use some water from unsaturated zone and create a buffer zone).
* Areas which are marked (2) are strips of vegetation to function as windbreaks. These vegetation are mid-dense shrubland and Mallee shrubland which are not tall enough to function as very effective windbreak. I support the idea if the land holders prefers to clear these strips and replant them with other trees.

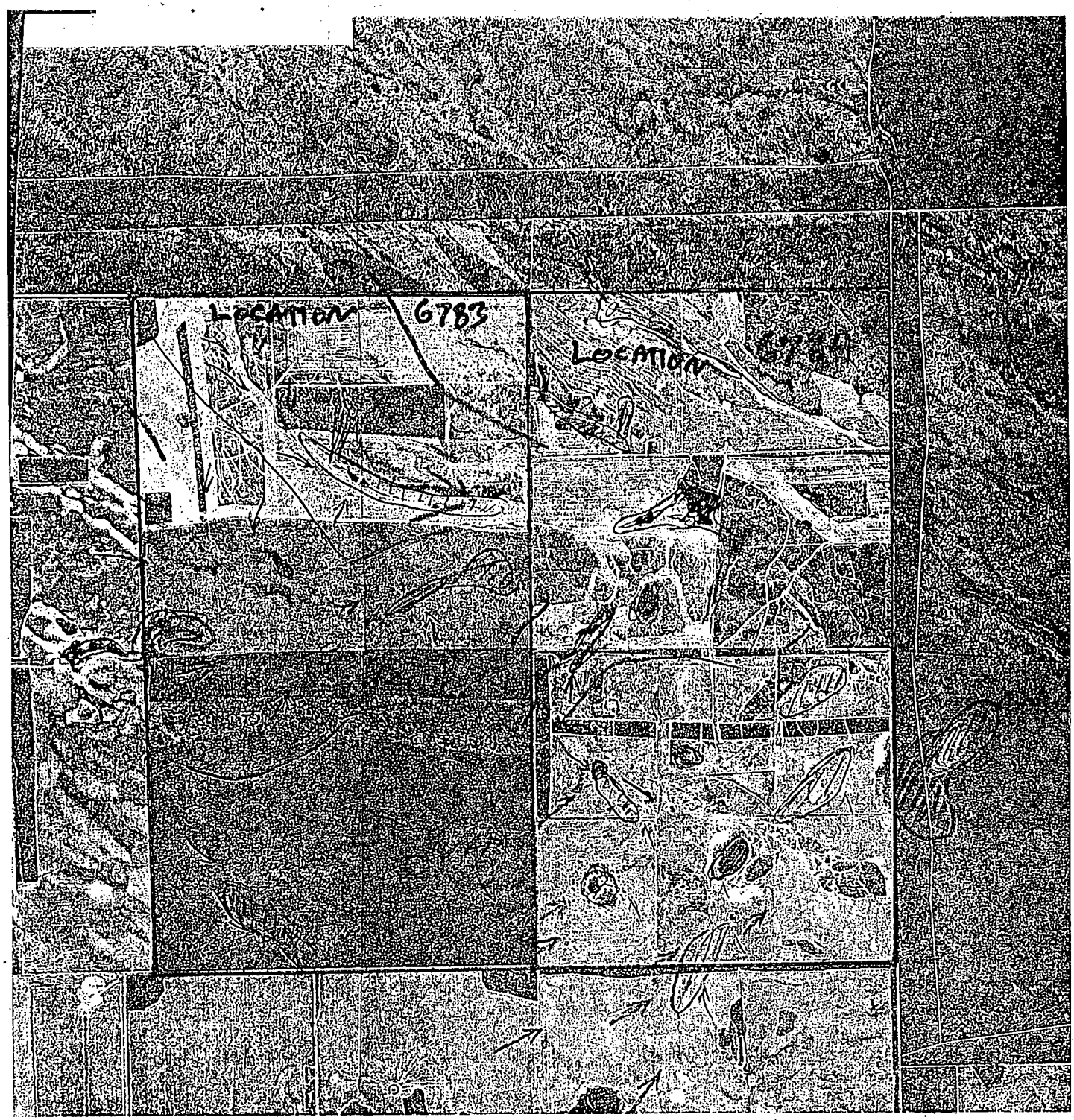
* Areas which are marked (3) are on or very close to Seifs and are not suitable for clearing.
* Area 4 is left for hydrological purposes as well as wind break.

I feel that clearing rest of the proposed areas will have little on-site or off-site effect provided the above mentioned conditions are observed.

Ferdo

Ruhi Ferdowsian,
Research Hydrologist
Agriculture WA,
Albany

20November 1996



LEGEND

catchment dividers

Flow lines

Potential saline areas

N

scale 1:38100

Figure 1

Salt Lake

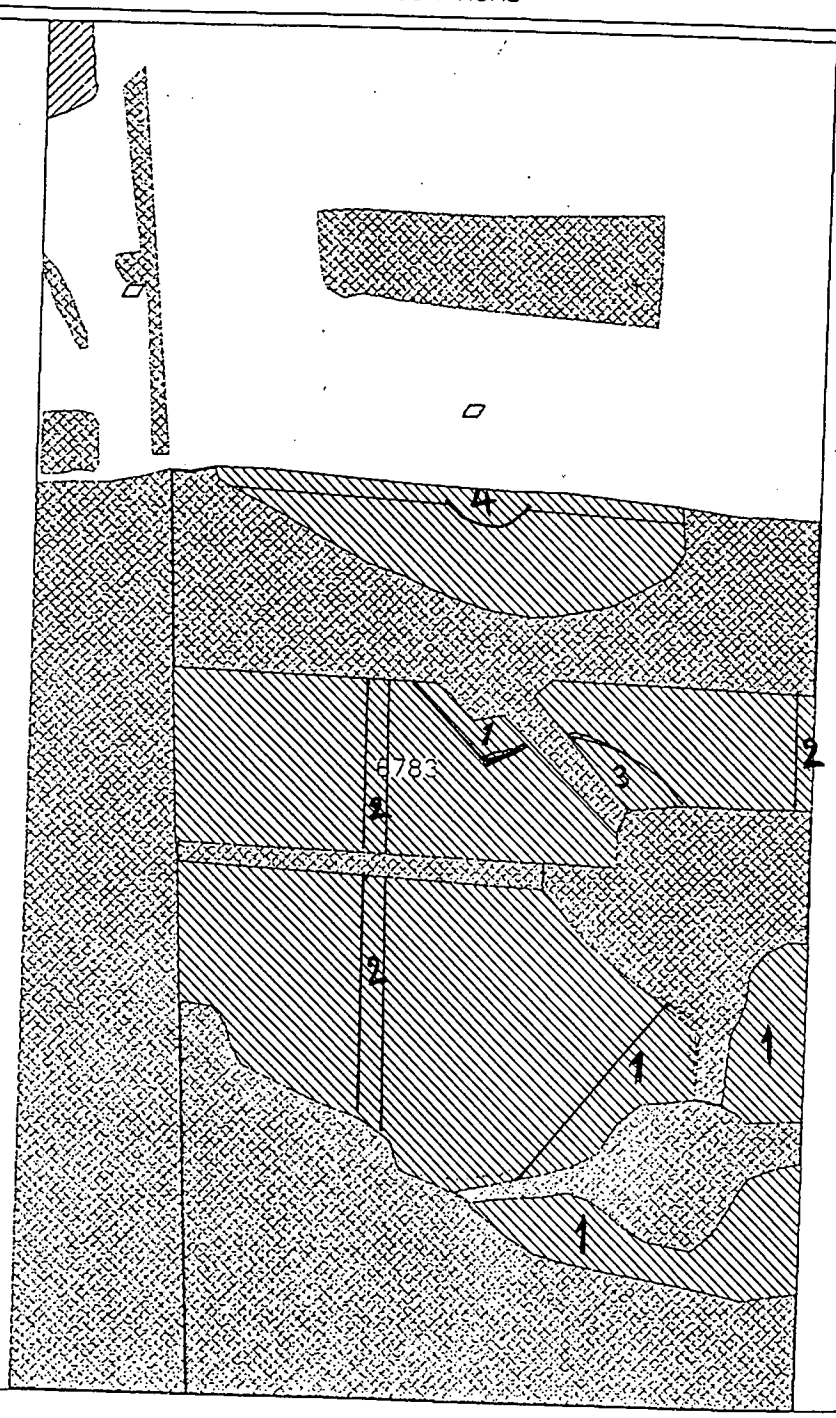
Figure 1

Figure 2:

6184800 M

Figure 2

BRANSON ROAD



32

6784

IDITIONS

REQUIRED UNTIL
NTRODUCED.

1551.5 M

DIRECTOR : ..... DATE : ...../...../ 1996

DIRECTOR : ..... DATE : ...../...../ 1996

COMPANY SECRETARY : ..... DATE : ...../...../ 1996

INSPECTING OFFICER : ..... DATE : ...../...../ 1996

6178800 MN

May. 16. 1996 10:32

CASE STUDY 2 **PLANTAGENET 6783**

CONSERVATION VALUES OF LAND PROPOSED FOR CLEARING

Property Report

Land ownership: *Aldis Nominees Pty Ltd...*
...Graham Davies (Director).....
.....

Location No. *.Plantagenet 6783.....*
Survey Date: *..27/6/96.....*
Surveyors: *....G.Craig & R.Safstrom...*

Location: **Shire:** *..Plantagenet.....* **Nearest Rd:** *....Branson Rd .....*
Nearest town/distance: *.....40 km west of Wellstead..[Map 1a].....*
Map reference: Lat.*.34...".....30..'* S. Long *.....118..".....09..'* E.
AMG: .Zone *..51.* *.....605600....*Easting *.....6181800* ..Northing
[Attach Map - 'Annexure A - Agreement to Reserve'] *[see Map 1b]*
Area of location: ..... *1182....*ha
Area of proposed land clearing: .....*317....* ha *.....27..* % of location
Area of native vegetation to be retained: .....*517..* ha *.....44..* % of location

Summary of issues from sustainable agriculture and nature conservation viewpoints:
(supply map if necessary)

The subject land consists of 834 ha of mallee-heath vegetation with small areas of Yate swamp. Parts of the land have been roughly cleared in the past, but have regrown substantially to near-original condition. The land is intact save for a number of tracks which have been recently cut through the uncleared vegetation.

There are three main issues concerning the land proposed for clearing:

1. *Regional Stagnant Aquifer. The location lies within a 'regional stagnant aquifer' with water levels rising at rates of up to 22 cm year in parts. The salt lakes in the area are the discharge sites for this aquifer and are not able to contain the rising groundwater (Ruhi Ferdowsian, pers.comm. & 1996). A small lake on the neighbouring location (Plantagenet 6782), also owned by Aldis Nominees, has dead and dying trees around its fringe; most of this location is cleared.*
2. ***Land capability.** A desktop analysis of the CSIRO soils map [Map 2] indicates that the better agricultural soils (Pillenorup soil type) occur in the northern half of Plantagenet 6783, which has already been cleared.. A large sector of the remaining uncleared area includes the Napier soil type which has a surface soil of grey fine sand which would be vulnerable to wind erosion, and according to Holm (1994, p2) "should not be cleared". (N.B. It is unknown whether this map has been ground truthed- Lisson and Shanhun may have carried out a soil survey during their inspection for the NOI).*
3. *Dieback (Phytophthera) is rife on the south-eastern slopes of the Stirling Range National Park [Map 5]. Birds and marsupials which depend on affected species (mainly Proteaceae) may become threatened if plant communities change significantly. The land proposed for clearing has large tracts of proteaceous heath in very good condition. Being disjunct from the Stirling Range National Park, it has greater potential to survive the effects of dieback in the long term.*
4. *Threatened species. A number of Declared Rare and Threatened species have the potential to occur in the subject land. Three declared rare flora species, (Conostylis misera , Daviesia harveyi and Drakaea confluens), four Priority One, eight Priority Two species, and the rare Western Mouse (Pseudomys occidentalis) have the potential to occur on the land. Detailed flora and fauna surveys, at the most suitable times of year to locate species are recommended.*

Definintions/Abbreviations:

AgWA - Agriculture Western Australia
NOI - 'Notice of Intent' [to clear land]
NPNCA - National Parks and Nature Conservation Authority
RVPS - Remnant Vegetation Protection Scheme
Subject land - area of native vegetation which includes areas proposed for clearing
SCRLWCS - 'South Coast Regional Land and Water Care Strategy', AgWA, Albany

1. WATER CONSERVATION:

Catchment: .....*Regional stagnant aquifer*..... **Av. Ann. Rainfall** .....*approx.470*.. mm

% Catchment cleared: .....*(not available)*..... % Shire cleared: ....*(not available)*.....

Wetlands of regional significance:
Are there any significant wetlands in the catchment? (refer to V.Cox. Dept Environmental Protection)
There are a few large salt lakes in the regional stagnant aquifer, including 'Salt Lake' which lies about 5 km east of the subject land.

Groundwater and salinity hazard:
Salinity rating of hydrological zone (refer to SCRLWCS): ...*(not available, expected Sep-Oct 1996 - AgWA Albany)*.....

Comments: .....

Eutrophicaton:
Any evidence of eutrophication of water channels or lakes in the catchment? (*not determined)* ...

Observations of water conservation issues in the area and the possible importance of the subject land:
A regional stagnant aquifer extends between Chillinup Rd and Stirling Range, and east towards Kalgan River. The boundaries have not yet been defined. There is a very low hydraulic gradient, and salt lakes are the discharge sites; these are now not sufficient to contain the rising groundwater. The whole region is experiencing increasing salinity and rising water tables. Any land clearing will affect other landholders within the regional stagnant aquifer (Ferdowsian, pers.comm. & 1996).....

1.2 SOIL CONSERVATION

Waterlogging:
Evidence of rising water tables in district? .....*Yes, see comment above*.....
Rates of rise? .....*up to 22*..cm/year (*Ferdowsian, pers.comm. &1996)*

Any low lying areas with poorly drained soils? ....*Yes, a number of small Yate swamps occur in the south-east sector of the location.(not to be cleared). There appears to be a low lying area, which could be prone to waterlogging in an western section proposed for clearing.* .....

Any land subject to flooding every year? .....*No*.....

Any land subject to prolonged inundation (>2 weeks)? .....*Not determined*.....

General observations: .....

Soils and land capability:
[Attach soils map: (eg Land Resource Series. Agriculture WA: CSIRO soils maps)] *[see **Map 2**]*

Soil Unit	Land Capability Class*	
	Water erosion	Wind erosion
A *KJ - light grey sand (12") over yellow sand*	*?II*	*?III-IV*
B *NP - lt. grey fine sand (4") over yellow grey fine sand + heavy gravel*	*?II*	*?IV-V*
C *Pil - Y.gr.brown sand + gravel (2") over y.gr.sand + heavy gravel*	*?I-II*	*?II-III*
D		
E		
F		

*Capability class (Holm 1994):

I - Very high capability: risk of land degradation negligible
II - High capability: limitations overcome by careful planning
III - Fair capability: careful planning & conservation measures required
IV - Low capability: extensive conservation requirements
V - Very low capability: should generally not be cleared

Comment: *A desktop analysis of the CSIRO soils map [Map 2] indicates that the better agricultural soils (Pillenorup soil type) occur in the northern half of Plantagenet 6783, which has already been cleared.. A large sector of the remaining uncleared area includes the Napier soil type which has a surface soil of grey fine sand which would be vulnerable to wind erosion, and according to Holm (1994, p2) "should not be cleared". (N.B. It is unknown whether this map has been ground truthed- Lisson and Shanhun may have carried out a soil survey during their inspection for the NOI).*

1.3 WILDLIFE CORRIDORS AND BUFFERS

[Attach map showing native vegetation. National Parks. Nature Reserves. public and RVPS land] *[see **Map 3**]*

Corridors and Stepping Stones:

Can the subject land form part of a corridor (up to 15 km radius) with gaps not more than 400 m wide in native vegetation between:

CALM reserved land?	Reserve Name/ No.	
	.....	Yes/ **No**
	.....	Yes/ No

Other public or RVPS land?	Location No.	
	..(not determined, required GIS map).....	Yes/ No
	.....	Yes/ No

Can the subject land form part of a stepping stone (up to 15 km radius) between:

CALM reserved land?	Reserve Name/ No.	
	....Stirling Range National Park.....	**Yes**/ No
	....South Stirling Nature Reserve.....	**Yes**/ No
	.....	Yes/ No

Other public or RVPS land?	Location No.	
	... ..*(not determined, required GIS map)*..	Yes/ No
	.....	Yes/ No

Other comments:

.....

.....

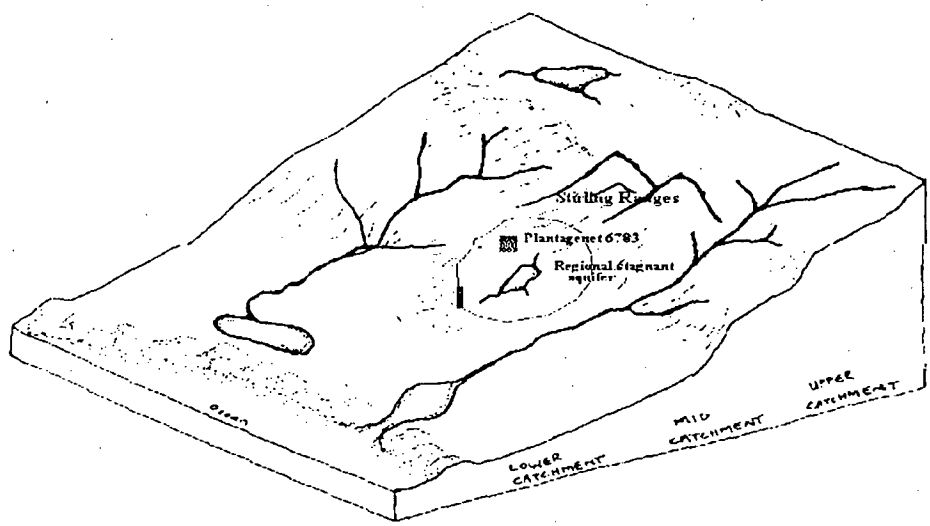
Buffers:

Can the subject land provide a buffer to NPNCA reserved land? Yes/ **No**

Is the subject land an inlier to an area reserved for conservation? Yes/ **No**
(can be vested with Shire or NPNCA)

1.4 LANDSCAPE

Landscape position:
(indicate position in landscape on diagram below: label rivers. inlets etc if applicable)



Landscape character:
Reason for high landscape value/scenic quality (refer to 'Reading the Remote Landscape Characters of Western Australia'. CALM publication. Perth):.....*Nothing exceptional, although the area would be seen from Bluff Knoll lookout, it would not differ from rest of agricultural landscape if cleared.*

Special physiographic features observed: (eg rock outcrops. breakaways. dolerite dykes) Yes/ **No**
.....
.....

Aboriginal sites observed: Yes/ **No**
Describe
.....
.....

2. REPRESENTATION

2.1 FLORA CONSERVATION

Predicted Threatened Flora: (attach Declared Rare Flora and Priority One and Two species list occurring within 10 minutes (Lat. and Long.) radius of location: available from Administration Officer-Flora. Wildlife Branch. CALM. Como)

		No. species predicted on subject land
Declared Rare Flora	**Yes**/No	.....*3...(1 4 low probability)*.....
Priority One	**Yes**/No	.....*4 (1 2 low probability)*..
Priority Two	**Yes**/No	.....*8 (1 8 low probability)*...

Predicted Threatened Plant Communities:
(eg Salmon Gum woodland; fresh-water wetland etc; plus refer to the RVPS - Vegetation Community Priorities or the WA Threatened Species and Communities Unit, CALM, Woodvale) *Haven't referred to latter but there are signigicant communities of proteaceous heath.*

Species richness/endemism:
Does any of the subject land have a high number of endemic species? Yes/No

Estimate the number of native taxa in a 10m x 10m quadrat:

Plant Community	No. of species
.....	.....
.....	.....
.....	.....

Wetlands of local significance:
Are there any significant wetlands on the subject land? *There are a number of small Yate swamps occurring in the south-east sector of the subject land.*

Vegetation Associations:

Vegetation System (Beard): .....*Qualup system*..... % cleared: .....

[Attach vegetation map: (eg Beard, Smith, Muir or best representation of region)] *[see **Map 4**]*

Beard's Vegetation Units (VU)	Area ha	% CALM[1]	% Other[2]	% Pre-clearing[3]
A				
B				
C				
D				
E				
F				

1 = Area VU in subject land X 100
Area VU in CALM land within 15 km radius

2 = Area VU in subject land X 100
Area VU in public land (ex CALM land) and RVPS* within 15 km radius

3 = Area VU in subject land X 100
Area VU in original uncleared vegetation within 15 km radius

Any extra plant communities identified from aerial photos/field investigation not indicated on vegetation map? (provide map overlay) .....
.....

Any plant communities not well represented in the Interim Biographical Representation in Australia (IBRA) region (refer to _____). or in Beard's Vegetation Systems?
.....
.....

Detailed flora survey by qualified ecologist/s recommended/ attached? Yes/ No

2.2 FAUNA CONSERVATION

Predicted Threatened Fauna:
(refer to Wildlife Conservation (Specially Protected Fauna) Notice, 1996 - Government Gazette, WA)
s1 = fauna which is rare or likely to become extinct; s4 = other specially protected fauna

Marsupials	Birds	Reptiles
Western Mouse....(s1).....	*Baudin's Cockatoo (s1)...*	.....
.....Chuditch.....(s1).....	*(=White-tailed Black Cockatoo)*	.....
.....	.....	.....

Comments: *The Western Mouse occurs in the Stirling Range National Park and has been trapped in gravelly, clayey soils in a range of vegetation types including heaths and taller shrublands. This habitat is present on the location. Quokkas have recently been found near Bluff Knoll, and the Chuditch was found in the area 30-40 years ago; and could still be present (Keith Morris, pers.comm.).*

***Baudin's Cockatoos** (White-tailed Black Cockatoos) were observed in a cropped area on the location during the property inspection. The proteaceous heath proposed for clearing could provide an important food source.*

Detailed fauna survey by qualified ecologist/s recommended/~~attached~~? Yes/ No

3. VIABILITY

Area and Shape:
Comment (indicate length:width ratio): *The subject land consists of 834 ha, and is essentially a square in shape (ratio 8:9). The vegetation is in excellent condition with no recent burns. Parts of the land have been roughly cleared in the past, but have regrown substantially to near-original condition. The land is intact save for a number of tracks which have been recently cut through the uncleared vegetation.*

Intactness:

Weed invasion .....*<2*....% (approx) area of total subject land

Other disturbances (eg tracks, gravel pits, rubbish dumps)
Tracks (ca. 10-15 m wide) have been made through native vegetation to delineate areas proposed for clearing.....*2*..% (approx) area of total subject land

.....% (approx) area of total subject land

Plant diseases/ pests:
Dieback (*Phytophthera* species) present? Yes/**No**
Potential impact: *.Present in nearby Stirling Range National Park and South Stirling Nature reserve (CALM, Albany- see **Map 5**); could severely impact proteaceous heath if introduced.*

Other diseases/pests observed? (eg Bacterial canker, *Armillaria* fungus, Terp insects) Yes/**No**
Potential impact: .....

Invasive plants:
Presence of potentially invasive plants observed? (eg Veldt grass, Shivery grass) Yes/**No**
Name/s: .....
Anticipated Impact: .....

Adjacent uses:
Any adjacent land uses that may impact on the subject land? Yes/**No**

7. REFERENCES

Ferdowsian. R. McFarlane DJ. Ryder AT. (1996) 'Wetlands on Tertiary sandplains need to be managed to reduce secondary salinity' *4th National Conference and Workshop on the Productive Use and Rehabilitation of Saline Lands.* Albany. Western Australia 23-30 March 1996.

Government Gazette. WA (1996) *Wildlife Conservation Act 1950. Wildlife Conservation (specially protected fauna) notice 1996.*

Robinson. CJ and Coates DJ (1995) *Declared Rare and poorly known flora in the Albany District.* Australia Nature Conservation Agency. Canberra and Department of Conservation and Land Management. Como.

Personal Communications:

Davies. Graham - farmer/ director of Aldis Nominees (the applicant)
Ferdowsian. Ruhi - Hydrogeologist. Agriculture Western Australia. Albany
Gillen. Kelly - Operations Manager. CALM. Albany
Grant. Malcom - Environmental Officer. CALM. Albany
Lisson. Jill - Land Conservation Officer. Agriculture Western Australia. Albany
Morris. Keith - Bioconservation Group. Science and Information Division. CALM. Woodvale
Riley. John - Flora Officer. Wildlife Branch. CALM. Como
Shanhun. Kevin - Land Conservation Officer's boss. Agriculture Western Australia. Albany
Shore. Jody - works with Don McFarlane who is Program Manager. South Coast Sustainable Rural Development Program. AgWA. Albany

APPENDIX

Summary of Threatened Flora (Declared Rare (DRF), Priority 1 (P1) and Priority 2 (P2) only) occurring within 10min. Latitude/Longitude (18 km) radius of Plantagenet 6783 (Wildlife Branch, CALM, Como).

*Habitat (determined from Robinson and Coates (1995) and. WAHERB printout for priority species)
N/A = not applicable to subject land
+++ = high probability
++ = moderate probability
+ = low probability

TAXA	STATUS	HABITAT*
Acacia awestonia	DRF	n/a
Banksia brownii	DRF	n/a
Centrolepis caespitosa	DRF	+
Conostylis misera	DRF	+++
Darwinia collina	DRF	n/a
Darwinia sp. Stirling Range (GJK 5732)	DRF	n/a
Darwinia squarrosa	DRF	n/a
Darwinia witwerorum	DRf	n/a
Daviesia pseudaphylla	DRF	+
Drakaea confluens	DRF	++
Dryandra anatona	DRF	n/a
Dryandra ionthocarpa	DRF	n/a
Dryandra montana	DRF	n/a
Eucalyptus goniantha ssp. goniantha	DRF	n/a
Leucopogon glaucifolius	DRF	+
Stylidium plantagineum	DRF	+
Verticordia carinata	DRf	n/a
Verticordia harveyi	DRF	+++
Xyris sp. Stirling Range (GJK 79510	DRF	n/a
Hakea oldfieldii	P1	+
Leucopogon pogonocalyx	P1	n/a
Melaleuca pritzelii	P1	+
Restio leucoblepharа	P1	++
Rumex drummondii	P1	+
Thomasia dielsii	P1	+
Verticordia huegelii var tridens	P1	++
Actinotus rhomboideus	P2	n/a
Adenanthos linearis	P2	+
Amperea micrantha	P2	n/a
Andersonia axilliflora	P2	n/a
Chamelaucium juniperinum	P2	+++
Cryptandra glabriflora	P2	+
Cymbonotus preissianus	P2	n/a
Daviesia glossosema	P2	+
Daviesia obovata	P2	n/a
Dryandra plumosa ssp. denticulata	P2	n/a
Eucalyptus kalganensis	P2	++
Eucalyptus x kalganensis	P2	+
Gonocarpus benthamii ssp. Stirling (CJR 1080)	P2	n/a

Gonocarpus rudis	P2	n/a
Lasiopetalum dielsii	P2	n/a
Leucopogon bracteolaris	P2	++
Leucopogon glaucifolius	P2	+++
Leucopogon gnaphalioides	P2	n/a
Leucopogon lasiophyllus	P2	n/a
Leucopgon tamariscinus	P2	+++
Lysinema lasianthum	P2	+
Microcorys virgata	P2	++
Muiriantha hasselii	P2	n/a
Opercularia rubioides	P2	+++
Orthrosanthus muelleri	P2	+
Persoonia micranthera	P2	n/a
Platysace sp. Stirling (JMF 88/262)	P2	n/a
Schoenus sp. Stirling (GJK 3427)	P2	n/a
Sollya drummondii	P2	n/a
Spyridium montanum	P2	n/a
Spyridium villosum	P2	n/a
Stylidium articulatum	P2	n/a
Stylidium keigheryi	P2	n/a
Thysanotus brevifolius	P2	+++
Thysanotus gageoides	P2	n/a
Verticordia brevifolia	P2	+
Xanthosia singuliflora	P2	+

REFERENCES (and POTENTIAL REFERENCES)

Agriculture Western Australia (1995) *Draft South Coast Regional Land and Water Care Strategy: The Fitzgerald Biosphere. South Coast.* Miscellaneous Publication No /96.

Allison HE. Brandenburg SA and Beeston GR (1993). *Natural Resource Zones for the South-West Land Division of Western Australia.* Technical Series No.55. Environmental Protection Authority. Perth.

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Newbey. K (1974) Botanical Maps. Newdegate 1: 250 000: Bremer Bay 1: 250 000 map sheets. (includes site visits to reserves and remnant vegetation with profile on vegetation structure. soil type. species composition). Unpublished. [Available from Angela Sanders. Fitzgerald Biosphere Project. Ravensthorpe: CALM Albany Office: Brenda Newbey. Perth.]

DEPARTMENT OF CONSERVATION AND LAND MANAGEMENT

Please address all enquiries to:

Albany District Office
44 Serpentine Road
ALBANY WA 6330
Tel: (098) 417133
Fax: (098) 417105

Your Ref:
Our Ref: 15.2.2.
Enquiries:

Kevin Shanhun
Department of Agriculture
Albany Highway
ALBANY WA 6330

Dear Kevin

N.O.I. TO CLEAR PLANTAGENET LOCATION 6783

An inspection of Plantagenet location 6783 for the presence of Declared Rare Flora was completed on Friday 15 December 1995.

Private Property owner Mr Davies accompanies Ellen Hickman and myself on the visit around the property.

No Declared Rare Flora were observed during the visit. However one particular species of Rare Flora, *Conostylis misera*, is known to occur on landforms and soils identical to those on the property within the nearby South Stirlings Nature Reserve.

This species favours low lying swampy depressions and the surrounding small dunes. These sites are generally vegetated with groves of Yate and or Redheart, *Eucalyptus decipiens*.

On this basis the area within the private property not nominated for clearing are the areas most likely to contain this rare species.

It was also noted that the native vegetation within the property is in good health, with no observable evidence of Phytophthora cinnamomi decline.

Considering that the remnant vegetation is located within the extensively cleared Kalgan River - Oyster Harbour catchment this particular area could be considered as a valuable asset to the conservation of flora and fauna within this catchment.

Regards

MALCOM GRANT
ENVIRONMENTAL OFFICER

28 December, 1995

MG:T:KSHANHUN.DOC

DEPARTMENT OF CONSERVATION AND LAND MANAGEMENT

Please address all enquiries to:

South Coast Region
120 Albany Highway
ALBANY WA 6330
Tel: (08) 98424500
Fax: (08) 98413329

Your Ref:
Our Ref:
Enquiries:

Gary Williams
Dept of Environmental Protection
141 St Georgest Tce
PERTH WA 6000

Dear Gary

Re: NOI to clear Plantagenet loc 6783.

Further to our letter of 28 Dec 1995 to AgWA, I have the following comments regarding loc 6783.

REGIONAL PROCESSES

The AgWA hydrology report places this area in a high salinity hazard zone. As indicated, clearing will result in changes to the existing (and rising) watertable. Any changes in groundwater recharge which may influence the watertable or current rate of change of the watertable is of concern due to potential impact on Pillenorup Swamp within Stirling Range National Park. This is one of only two semi-permanent, unwooded, freshwater wetlands within the park and therefore is of special interest. No habitat of this quality is known south of the park in private property.

REPRESENTATION

Three threatened flora species were considered during survey of the location 6783.
In addition to *Conostylis misera* for which details have been supplied, the following species were considered:
Verticordia harveyii. The likelihood of this species was discounted once the distribution of soil types on loc 6783 was determined. This species requires deeper sands and the plant community community normally associated was not present on 6783.
Drakea confluens. No search was undertaken for this species due to the absence of suitable soil types (found of upland clay sites in SRNP). It is also difficult to find unless flowering during a period following fire. Location 6783 has remained unburnt for some time. It was also not the known flowering time nof this species.

Less than 20% of the original natural vegetation cover can be found on private land within a 15km radius of location 6783, however the Stirling Range National Park and South Stirling Nature Reserve are within this zone and contain representative plant communities. As noted in our letter of Dec 28, location 6783 generally lies within a cleared Agricultural landscape which has less than 20% of the original vegetative cover remaining, apart from the SRNP to the north. On this basis the block probably acts as a stepping stone and has the potential for further linkages, with revegetation, to other remnants and the SRNP

FAUNA

Although no surveys were conducted, the vegetation of location 6783 is likely to support populations of Honey Possums, Pygmy Possums and also the Western Mouse (*Pseudomys occidentalis*) which is currently on the Threatened Fauna List. This species is known from the SRNP.

I hope these additional comments are useful.

Yours sincerely

KELLY GILLEN
for REGIONAL MANAGER
SOUTH COAST REGION

1 May 1997

talbot:corkellygwilliams

Document 5

TO: GARY WILLIAMS, DEP
Fax 9322 1598

FROM: JEFF KITE, WRC

SUBJECT: PROPOSED CLEARING BY ALDIS NOMINEES
PLANTAGENET LOCATION 6783, BRANSON RD

I have reviewed the information you supplied and discussed the proposal with Ian Loh and Luke Penn.

Based on the information provided, the area where this property is located is relatively flat and has a low groundwater gradient and is clearly subject to a salinity risk. Closeby, the watertable has been measured to be rising at a rate of about 20cm per year and wetlands are already showing signs of suffering from the effects of increased salinity.

The clearing proposed is very likely to exacerbate this situation. The changes in hydrology which will occur are likely the cause further decline in the condition of the vegetation in and around these wetlands which I understand is generally in very good condition. Much of the effect is likely to be on adjacent properties. The clearing may also have an impact on the values of part of the Stirling Range National Park which is downstream of the area in question.

I am not convinced that the management proposed by the owner or suggested (rather than required) in the hydrological report are likely to make the clearing impact neutral.

In summary, the circumstances of the relative flatness of the land, a low groundwater gradient and rising saline groundwater due to existing clearing, would appear to render farming in the area unsustainable in the medium term and call into question the wisdom of permitting even limited clearing. This conclusion could change with the implementation of high water use farming systems. However, until these are demonstrated, the Commission is not convinced that current farming activities and further clearing in the area are sustainable with respect to the protection of water resources and water dependent ecosystems.

This response is considered to be consistent with the objectives of the State Salinity Strategy..

Jeff Kite

Jeff Kite
Principal Environmental Officer

13 May, 1997

Document 6

Proposal to clear approx 300 Ha. on Plantagenet [illegible] 6783.
Branson Road South Stirlings, Shire of Plantagenet.
Assessment 1016.

Owners: Aldes Nominees Pty Ltd as trustee for Ian Davies Family Trust.

Proponent: G.R. Davies. Director of Aldes Nominees P/L

Pl. Location 6783 is situated some 70 Km N.E. of Albany on the southern boundary of the Stirling Range National Park. The block consists of a total of almost 1200 Ha of land of which some 350 Ha is currently cleared & arable. The land is flat to gently undulating, and is on the margin of the Kalgan River Catchment, has no clearly defined drainage lines to the Kalgan River, in fact what drainage there is tends eastwards away from the Kalgan & towards natural lakes in the Kojaneerup area. The soil type varies from gravel loams & sands carrying Mallee timber in association with blackboy, chittick & teatree scrub on the land to be cleared, to Banksia & stunted Jarrah on the sand ridges to be left in Bush and Yate and large silver Mallee on the clay loam, occasional swampy hollows also to be left in bush.

The proposal to clear some 300 Ha has been developed in association with Kevin Shanhun, Soil Conservation officer with Agriculture W.A. Albany, to fit in with the clearing control guidelines under the Soil & Land conservation Act, and I am prepared to sign an "Agreement to Reserve" the balance of the bush on the block once approval is granted to clear the proposed 300 odd Ha.

Most of the points raised in the draft C.E.R. Review Guidelines have been considered & covered

4

under the Clearing Control Guidelines.

The Proposal involves ① "chaining" the bush down with a heavy chain dragged between two tractors, ② raking a firebreak around the edge of each piece of land to be cleared and ③ burning on a suitable day with extreme care taken to prevent the fire escaping into adjoining bush areas, ④ followed by ploughing ripping raking etc to clean up the stumps etc followed by ⑤ cropping to cereals, legumes & oilseeds on a continuous sustainable rotation incorporating stubble retention to alleviate wind erosion.

The main environmental/erosion risk is from wind erosion, the main strategy for controlling this is to clear & sow the land as quickly as possible in the first instance, thereafter to maintain stubble cover on the land which has proved over many years to be a safe & effective way of eliminating wind erosion. The maintenance of good stubble cover on the land is not helped by grazing animals on the stubble, therefore the proponent has no intention of grazing animals, particularly sheep, on the land in the foreseeable future.

All of the sloping land on the existing clearing is contour banked & worked on the contour to control occasional water erosion, and any sloping land on the area to be cleared will be contoured as necessary to control water erosion.

The environment of the area that is cleared will of course be impacted but as far as one can tell the environment of adjoining areas left in bush is not impacted provided no grazing animals have access to that bush.

That is why the "agreement to leave" will state, & I will agree with & observe the condition that the land must be fenced off from the clearing before any grazing animals are allowed access to the area.

Because of the amount of land being left on the block, it does not seem likely to me (in the light of 15 years experience in this district) that the clearing of 300 odd ha will impact on any adjoining land holder.

The main thrust of the environmental management programme will be stubble [redacted] retention, legume based, sustainable rotation of crops, however a commitment is willingly given that any areas that may in future prove to be too fragile or for any reason unsuitable for that rotation will be sown to permanent pasture or quick growing trees or fodder [redacted] shrubs.

Monitoring & auditing will, I understand, be carried out by Agriculture W.A. under the clearing control guidelines, and I would willingly agree to 5 yearly reviews in conjunction with Agriculture W.

Biological issues.

1. This item covered under area to be left in bush.
2. Adequate buffers have been left around gate swamps. There are no wetlands or watercourses in the area to be cleared, & it does not adjoin the National Park.
3. No rare flora (See CALM letter)
4. No wetlands & watercourses.
5. Groundwater. Cropping practices will aim at using species to maximise water use therefore impacting as little as possible on groundwater levels.
6. Remnant bushland will be protected from stock, weeds, & erosion by best farming practice.

7. Present farm practices on this & adjoining blocks dont appear to have spread dieback (See other letter)

8. Impact of clearing on salinity: This of course is a great unknown, but existing clearing on this & adjoining blocks has not so far revealed any problems with salinity. The fact that this block adjoins a 200,000 Ha. National Park should provide enough bush to hold the water table down

9. Land stability already covered.

10. Feral flora & fauna: Agriculture in W.A. needs some weed free 'new land' for the propagation & seed increase of new varieties of crops & pastures. The value to me of keeping this "new land" free of feral flora (weeds) will be considerable, so extreme measures will be taken to maintain it's weed free status. Feral fauna (mainly rabbits) will always be eliminated and most likely new biological control diseases will help in this task. Regular fox & cat poisoning & shooting is carried out as a routine farm practice.

11. Nutrients Management: There are no drainage lines or water courses on this land to "export" nutrients. Cropping practices which place fertilizer in close proximity to the crop roots ensure that fertilizer uptake is maximised. Little or no fertilizer will be "broadcast" as this does not place the fertilizer near the plant roots & allows some dust to drift into nearby bush

12. No known Aboriginal Heritage issues here.

13. Landscape. Because of the amount of bush being left the clearing will be barely viewable from any direction.

Key topics:

- The areas to be left in bush will represent all types of flora, fauna & vegetation found in this district.
- The soil types are considered by Agriculture W.A. to be suitable for sustainable agriculture & have proved to be so on many nearby farms over 30 years.
- The major problems encountered with this soil type are, wind erosion, and acidity.
  As described wind erosion can be controled by stubble retention, little or no graying, and shelter belts or strip cropping.
  Acidity is controled by the application of lime periodicly
- No declared rare or priority flora. (See CALM letter)
- Vegetation associations will be become in the areas to be left in bush under the Agreement to Reserve.
- - present state of the environment - Most of the land has be cleared before, & is regrowth. Some is Virgin & most that will be left in Bush is Virgin.
  - impact of proposal - None.
  - Nominated management objectives - Preserve bush, manage cleared land with best practice eg: minimum till, Stubble retention.
  - environmental management response. All the above plus fire control.
  - envisaged state of environment. Pristine & sustainable.
- details of clearing - crops - etc. Outlined above. No irrigation. Limited herbicide & pesticide use.

- Copy of farm plan will be supplied to Committee hearing.
- no historical, archaeological, or ethnographic sites.
- Consistency with management of National Park.

Like other adjoining land holders I cooperate with CALM in joint rabbit control & fire control.

A wildlife corridor is & will be maintained between the national park & the areas of bush to be reserved. Public Consultation. The Plantagenet shire council have had the proposal explained to them & no problems or objections have been raised.

The Sterling Land Conservation District Committee, of which my wife & I have been active members, have been advised of the details of this proposal.

Key commitments are given by the proponent to actionable & auditable management of the environmental issues. This is done so willingly because good land management is the basic tenant of farming and what is good for the land & environment is also good for the farmer & his family.

Notes to plan for clearing Pt. Loc. 6783

1. The only subdivision fence on the property is that between the existing clearing and bush. The property is boundary fenced. Future fencing will be directed towards fencing in the cleared land rather than fencing in the bush.
2. The strategy involved in marking out the areas to be cleared was, to clear only the better gravel & clay based land, generally carrying blue, black, & silver bark mallee, cheltock & blackboy and leave in bush the sandy ridges carrying banksia & stunted jarrah, and the swampy areas carrying Yate & melaleuca species. Considerable efforts will be made to protect the uncleared bush from fire during the clearing process.
3. The farming strategy on the "new land" will be one of continuous cropping to cereals & lupins employing stubble retention & minimum tillage techniques for several years, once the stumps are removed by blade plowing & raking, to be followed by several years of certified seed production to utilise the natural weed free states of the new land.
No livestock will be carried on the land during this critical phase, both to avoid weed contamination and degrading the remnant bush. This policy will avoid the need for & the cost of fencing & water supplies.
4. The area to be cleared has no defined drainage lines or creeks, & does not drain into any rivers. There are no breakaways or salt lakes. The country is gently undulating and should not pose any water erosion hazards, though some sloping parts & may benefit from contour banks.
5. W.A. Agriculture needs some clean weed free new land for certified seed production of pasture, cereals, legume & canola species, & it is my intention to protect the weed free states of this land for as long as possible.

G. Davies.