

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

Aldis Nominees Pty Ltd

**Report and recommendations
of the Environmental Protection Authority**

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Summary and recommendations

Aldis Nominees Pty Ltd proposes to clear 250 ha of native vegetation on Plantagenet Location 6783 Branson Road, Shire of Plantagenet. This report provides the Environmental Protection Authority's (EPA) advice and recommendations to the Minister for the Environment on the environmental factors relevant to the proposal.

Section 44 of the Environmental Protection Act 1986 requires the EPA to report to the Minister for the Environment on the environmental factors relevant to the proposal and on the conditions and procedures to which the proposal should be subject, if implemented. In addition, the EPA may make recommendations as it sees fit.

Environmental Factors

It is the EPA's opinion that the following are the environmental factors relevant to the proposal:

- (a) Water - groundwater rise leading to salinity;
- (b) Wetlands - effects of salinisation;
- (c) Declared Rare and Priority Flora - loss of species through clearing;
- (d) Specially Protected (Threatened) Fauna - loss of habitat through clearing; and
- (e) Vegetation communities - loss of regionally significant communities.

Conclusion

The EPA has considered the proposal by Aldis Nominees Pty Ltd to clear 250 ha of native vegetation on Plantagenet Location 6783 Branson Road, Shire of Plantagenet. The EPA considers that (a) Water and (b) 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, if implemented, could not meet the environmental objectives and thus the proposal should not proceed for the following reasons:

- (a) the rising groundwater levels and increasing salinity in the catchment are likely to impact on native vegetation;
- (b) water quality in wetlands in the catchment will continue to decline and water levels will continue to rise; and
- (c) there is sufficient evidence that the proposed clearing on Location 6783 would contribute to rising groundwater levels and increasing salinity and increase the risks to native vegetation and wetlands.

The EPA has decided that additional information about the remaining factors Declared Rare and Priority Flora, Specially Protected (Threatened) Fauna, and vegetation communities is not required unless the Minister for the Environment determines that the assessment of these remaining factors was needed before a decision on the proposal could be made.

4. Other advice

The proposal described in this report is the first formal assessment prepared in accordance with the MOU for the protection of remnant vegetation on private land in the agricultural region of Western Australia.

The proposal has come before the EPA at a time when the problem of rising groundwater and salinity had been highlighted in its Annual Report. Indeed, the government has now established a State Salinity Council which has a focus on the implementation of the Salinity Action Plan.

The EPA has been consistent in expressing its concern about the environmental impact of increasing salinity, not only on agricultural lands but also on nature reserves, rivers, streams and lakes. There is a need for the establishment and implementation of catchment management plans to assist in slowing down the rise in the levels of groundwater. However, there is also a need to retain native vegetation wherever this is possible.

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, including revegetation, in place to attempt to halt the rise in groundwater levels.

The EPA is conscious that the proponent has expressed concern in terms of equity, noting that in earlier years much of the catchment of which the proponent's property is a part has been cleared. However, the EPA has a responsibility to report to the Minister within the context of the state of the environment at the time of reporting.

Recommendations

The EPA recommends that:

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 - groundwater rise leading to salinity; and
 - (b) Wetlands - effects of salinisation.
3. That the Minister for the Environment notes that the EPA has not considered the environmental factors of:
 - (a) Declared Rare and Priority Flora - loss of species through clearing;
 - (b) Specially Protected (Threatened) Fauna - loss of habitat through clearing; and
 - (c) Vegetation communities - loss of regionally significant communities.because there is presently insufficient information on each of them.
4. That the Minister for the Environment notes that the EPA considers that enough is known about the factors Water and Wetlands for the EPA to form the opinion that the proposal, if implemented, could 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 needed before a decision on the proposal could be made.
5. That the Minister for the Environment notes that if further assessment of the proposal is necessary, so as to report on all of the relevant 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 to determine if there are Specially Protected (Threatened) Fauna species reliant on those areas proposed to be cleared.
6. The Minister for the Environment notes that the EPA has not included in this Bulletin “conditions and procedures to which the proposal should be subject, if implemented” because the EPA holds the view that the proposal should not be implemented.
 7. The Minister for the Environment not issue a statement that the proposal may be implemented.

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1. Introduction and background

Aldis Nominees Pty Ltd proposes to clear 250 hectares of native vegetation on Plantagenet Location 6783 Branson Road, Shire of Plantagenet. This report provides the Environmental Protection Authority's (EPA) advice and recommendations to the Minister for the Environment on the environmental factors relevant to the proposal.

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

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

The Notice of Intent to clear Location 6783 was referred to the EPA by the Commissioner of Soil and Land Conservation (Commissioner) in February 1996 for environmental impact assessment. The level of assessment was set at Consultative Environmental Review (CER) by the EPA on the 4 April 1996.

The CER document for the proposed land clearing was prepared in the accordance with the formal environmental assessment process outlined in the Memorandum of Understanding (MOU) for the protection of remnant vegetation on private land in the agricultural region of Western Australia (AgWA, 1997).

The CER contains the EPA's Preliminary Assessment Report as well as other documents from the Commissioner of Soil and Land Conservation (Commissioner), Water and Rivers Commission (WRC) and the Department of Conservation and Land Management (CALM). The process of preparing a CER for land clearing proposals is different to the usual proponent prepared CER.

The aim of the MOU is to outline a streamlined process (including an environmental impact assessment process) and a set of criteria (referred to as the 'Safstrom Criteria') for assessing land clearing proposals that integrates biodiversity, nature, soil and land conservation issues (Safstrom and Craig, 1996).

The proposal to clear Location 6783 has been assessed by the EPA in accordance with the principles and criteria for assessing the nature conservation value of native vegetation contained in the MOU.

Further details of the proposal are presented in Section 2 of this report. Section 3 discusses environmental factors relevant to the proposal. Section 4 provides other advice associated with the outcomes of the assessment. Section 5 presents the EPA's conclusions and Section 6 the EPA's recommendations.

A list of people and organisations that made submissions is included in Appendix 1 and references are listed in Appendix 2.

2. The proposal

Aldis Nominees Pty Ltd proposes to clear a 250 ha portion (21% of Location 6783) of native vegetation on Location 6783 for cereal cropping. Location 6783 has a total area of 1,182 ha of which 340 ha (29%) is currently cleared. It is proposed to retain the native vegetation on 589 ha (50%) of the property.

The amount of native vegetation originally proposed to be cleared on Location 6783 was 300-400 ha. The proposal has been modified so that the amount of native vegetation to be cleared has been reduced to 250 ha.

Location 6783 is situated on a sandplain immediately south of the Stirling Range National Park. The sandplain is internally drained which means there are no watercourses draining surface water out of the area (Figures 1a & 1b).

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.

3. Environmental factors

3.1 Relevant environmental factors

Section 44 of the Environmental Protection Act 1986 requires the EPA to report to the Minister for the Environment on the environmental factors relevant to the proposal and on the conditions and procedures to which the proposal should be subject, if implemented. In addition, the EPA may make recommendations as it sees fit.

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

- (a) Water - groundwater rise leading to salinity;
- (b) Wetlands - effects of salinisation;
- (c) Declared Rare and Priority Flora - loss of species through clearing;
- (d) Specially Protected (Threatened) Fauna - loss of habitat through clearing; and
- (e) Vegetation communities - loss of regionally significant communities.

The relevant environmental factors are discussed below and summarised in 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.

The Department of Conservation and Land Management (CALM) supports the EPA's view outlined in the EPA's Preliminary Assessment Report in the CER and has advised that issues concerning declared rare and priority flora, protected fauna and vegetation communities would need to be considered prior to any decision to allow any clearing to proceed.

3.2 Water

Discussion

Location 6783 is situated on a sandplain between the Stirling Range and the coast. The sandplain is internally drained which means there are no watercourses draining surface water out of the area (Figures 1a & 1b). Depressions in the area hold the water until it evaporates or recharges into 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) (Agriculture WA, 1996).

Agriculture Western Australia has advised that the aquifers would have been in hydrological equilibrium when the catchment was covered with native vegetation. Once the vegetation is cleared crops and pastures do not use as much water as the native vegetation. In a 470mm rainfall year, 12mm of rainfall passes the crop/pasture root zone on loamy soils and 50mm on deep sandy soils. This water becomes aquifer recharge (AgWA pers comm).

The following comments have been received in relation to the proposal:

Department of Environmental Protection

In 1996 the DEP appointed Ms Gillian Craig to provide an initial assessment report of the clearing proposal (Craig 1996). 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".

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 (Agriculture WA 1997). The depressions in the vicinity of Location 6783 act as evaporation pans and further clearing of deep-rooted native vegetation would cause groundwater levels to rise so that more and more wetlands would 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 in the Stirling Range National Park, to the east of Location 6783 (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 remnant vegetation on Location 6783. 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 would impact on the rate at which groundwater would rise if appropriate farm management practices were 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 6783 without successful farm management (Commissioner 1997).

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 occurring in the catchment. Further clearing would exacerbate the problem of rising ground water levels.

Some of the salinity on Location 6784, the property situated immediately east of Location 6783, is due to clearing and present farm management practices on Location 6784. The problems on Location 6784 would be compounded if excessive clearing occurred on Location 6783. Native vegetation around the wetland on Location 6783 should not be cleared so that runoff and recharge into the aquifer is minimised (Commissioner 1996).

The Commissioner has concluded “that salinity may be manageable if clearing is restricted to certain areas, as set out in the Agreement to Reserve, and if ongoing management conditions reducing the expected impacts are adhered to by the proponent.” (Commissioner 1997).

The Commissioner has advised that the following farm management practices would 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 use of the land use’ is generally interpreted as meaning agriculture.

This is an important distinction when considering the Commissioner’s advice. The Commissioner has advised that the proposal would not cause land degradation on future agricultural landuses. This should not be interpreted to mean that the proposal would not impact on nature conservation values. Based on the advice provided by the Commissioner, groundwater levels and salinity are increasing in the vicinity of Location 6783 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. In summary, the Commission advised that it “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” (CER Document 5).

The Proponent

The proponent contends that the proposed land clearing on Location 6783 would not increase groundwater recharge or cause groundwater levels to rise for the following reasons:

- deep sandy groundwater recharge areas on Location 6783 are not being cleared and the proposed clearing would have negligible impacts on local and regional water tables; and
- most of the annual rainfall would be used by the crops and pastures that would be grown on the cleared land and any excess water in wetter years would be soaked up by the surrounding bush. This is contrary to the EPA’s assumption that crops and pastures would not utilise much of the annual rainfall;

The Deputy Commissioner has provided the following advice in response to the proponent's statements:

- crops and pastures do not use as much water as native vegetation and any surplus water would recharge aquifers underlying the land;
- current agricultural practices on land that is already cleared in the catchment is resulting in a 200mm average annual rise in groundwater levels; and
- clearing a further 250 hectares on Location 6783 would increase the volume of water entering the local and regional aquifer which underlies the property and cause the groundwater level to rise until a new hydrological equilibrium has been reached.

The proponent's claim that the proposed clearing would have no impact on groundwater levels relies entirely on the successful use of crops and pastures to reduce groundwater recharge from the land proposed to be cleared.

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 Draft State of the Environment Report identifies land salinisation as one of WA's most significant environmental issues and recommends the implementation of the Salinity Action Plan and the protection of existing remnant vegetation on public and private lands from the effects of rising saline groundwater.

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;
- (d) the Commissioner of Soil and Land Conservation has advised that the proposed clearing would 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 would 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 EPA notes the recent advice from the Deputy Commissioner of Soil and Land Conservation in response to the proponent's statements set out in the Discussion section above.

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

Discussion

The following comments have been received in relation to the proposal:

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 (Figure 1b). Surface expression of salinity can be seen in these Yate Swamps near the property (Craig, 1996).

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 (Commissioner 1996).

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 within the Stirling Range National Park to the east of Location 6783. Rising groundwater levels and salinity in the catchment will impact on this wetland (Figure 1b).

Agriculture Western Australia has advised that additional runoff and groundwater recharge from the proposed clearing would 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 would be retained (Commissioner, 1996).

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 environmental 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 (Commissioner, 1997).

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 (CALM pers comm). In contrast the Commissioner has advised that the clearing is not likely to impact on Pillenorup Swamp (Commissioner, 1996).

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 (CER Document 5).

Assessment

The area considered for assessment of this relevant environmental factor is the catchments for the local (10,000 ha) and regional (greater than 30,000 ha) aquifers 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) 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; and
- (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:

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

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 would contribute to these problems.

It is the EPA's opinion that the proposed clearing would most likely 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. Other advice

The proposal described in this report is the first formal assessment prepared in accordance with the MOU for the protection of remnant vegetation on private land in the agricultural region of Western Australia.

The proposal has come before the EPA at a time when the problem of rising groundwater and salinity had been highlighted in its Annual Report. Indeed, the government has now established a State Salinity Council which has a focus on the implementation of the Salinity Action Plan.

The EPA has been consistent in expressing its concern about the environmental impact of increasing salinity, not only on agricultural lands but also on nature reserves, rivers, streams and lakes. There is a need for the establishment and implementation of catchment management plans to assist in slowing down the rise in the levels of groundwater. However, there is also a need to retain native vegetation wherever this is possible.

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, including revegetation, in place to attempt to halt the rise in groundwater levels.

The EPA is conscious that the proponent has expressed concern in terms of equity, noting that in earlier years much of the catchment of which the proponent's property is a part has been cleared. However, the EPA has a responsibility to report to the Minister within the context of the state of the environment at the time of reporting.

5. Conclusions

The EPA has considered the proposal by Aldis Nominees Pty Ltd to clear 250 ha of native vegetation on Plantagenet Location 6783 Branson Road, Shire of Plantagenet. The EPA considers that (a) Water and (b) 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, if implemented, could not meet the environmental objectives and thus the proposal should not proceed for the following reasons:

- (a) the rising groundwater levels and increasing salinity in the catchment are likely to impact on native vegetation;
- (b) water quality in wetlands in the catchment will continue to decline and water levels will continue to rise; and
- (c) there is sufficient evidence that the proposed clearing on Location 6783 would contribute to rising groundwater levels and increasing salinity and increase the risks to native vegetation and wetlands.

The EPA has decided that additional information about the remaining factors Declared Rare and Priority Flora, Specially Protected (Threatened) Fauna, and vegetation communities is not required unless the Minister for the Environment determines that the assessment of these remaining factors was needed before a decision on the proposal could be made.

6. Recommendations

The EPA recommends that:

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 - groundwater rise leading to salinity; and
 - (b) Wetlands - effects of salinisation.
3. That the Minister for the Environment notes that the EPA has not considered the environmental factors of:
 - (a) Declared Rare and Priority Flora - loss of species through clearing;
 - (b) Specially Protected (Threatened) Fauna - loss of habitat through clearing; and
 - (c) Vegetation communities - loss of regionally significant communities.because there is presently insufficient information on each of them.
4. That the Minister for the Environment notes that the EPA considers that enough is known about the factors Water and Wetlands for the EPA to form the opinion that the proposal, if implemented, could 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 needed before a decision on the proposal could be made.
5. That the Minister for the Environment notes that if further assessment of the proposal is necessary, so as to report on all of the relevant 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 to determine if there are Specially Protected (Threatened) Fauna species reliant on those areas proposed to be cleared.
6. The Minister for the Environment notes that the EPA has not included in this Bulletin “conditions and procedures to which the proposal should be subject, if implemented” because the EPA holds the view that the proposal should not be implemented.
 7. The Minister for the Environment not issue a statement that the proposal may be implemented.

Relevant Factor	Environmental Objective	Government agency/organisation comments and assessment	EPA Advice
Water (salinity)	<ul style="list-style-type: none"> •Ensure that clearing does not result in changes in groundwater levels that could lead to salinity. 	<ul style="list-style-type: none"> •The groundwater level is rising by approx 200mm/year due to the amount of vegetation that has already been cleared.(AgWA) •The proposed clearing will have a 3% impact on the rate of groundwater rise/year which is equal to 6mm per year.(AgWA) •Surface expression of salinity can be seen in the Yate Swamps near Location 6783. (AgWA) •Some of the potential salinity on the adjoining property is due to clearing and present farm management practices. These problems would be compounded if excessive clearing occurs on Loc 6783 (AgWA). •Eventually large areas of the adjoining property (Loc 6784) and the lake within the National Park will become salt affected. (DEP Consultant) •Salinity is increasing in the wetlands in the area. Clearing may further compound these problems. (AgWA) •Deep sandy groundwater recharge areas on Location 6783 are not being cleared and the proposed clearing will have negligible impacts on local and regional watertables (proponent). •Most of the annual rainfall will be used by the crops and pastures that will be grown on the cleared land and any excess water in wetter years will be soaked up by the surrounding bush (proponent). •There is no evidence to suggest that the management proposed by the owner and AgWA is likely to counteract the effect of clearing deep rooted vegetation (WRC). 	<p>Having particular regard to:</p> <ul style="list-style-type: none"> (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, <p>The EPA concludes that:</p> <ul style="list-style-type: none"> (a) the rising groundwater levels and increasing salinity in the catchment are likely to impact on native vegetation; (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. • 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 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.

Table 1: Relevant factors and summary of EPA advice

Wetlands	Protect the environmental values and maintain or enhance key ecological functions of the wetland.	<ul style="list-style-type: none"> •AgWA has advised that the landclearing will cause groundwater levels to rise and compound salinity in wetlands. •The proposed clearing is likely to exacerbate the salinity problem. Changes in hydrology may cause further decline in the condition of the vegetation around the wetlands in the catchment (DEP Consultant). •The main discharge site for the aquifer in this area is a salt lake 4km to the east in the Stirling Range National Park. •Yate swamps occur in the south east part of Loc 6783 (DEP Consultant). •Nearby wetlands have suffered substantial vegetation decline since clearing.(AgWA) 	<p>Having particular regard to the:</p> <ul style="list-style-type: none"> (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. <p>The EPA concludes that there is:</p> <ul style="list-style-type: none"> (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. <ul style="list-style-type: none"> •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. •For the EPA's objective to be met no further vegetation should be cleared within the catchment in which Location 6783 is situated.
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Table 1: Relevant factors and summary of EPA advice

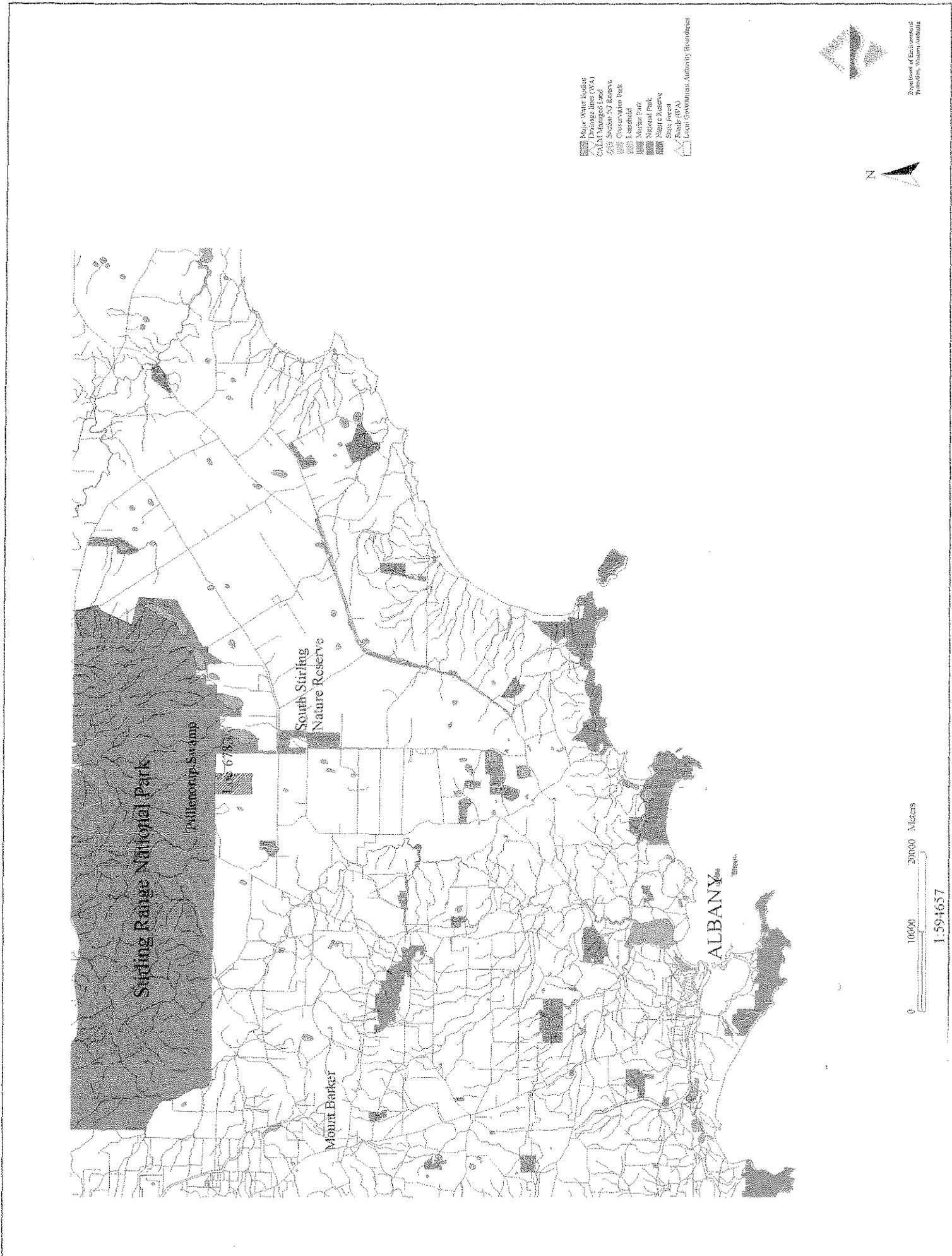


Figure 1a. Region plan

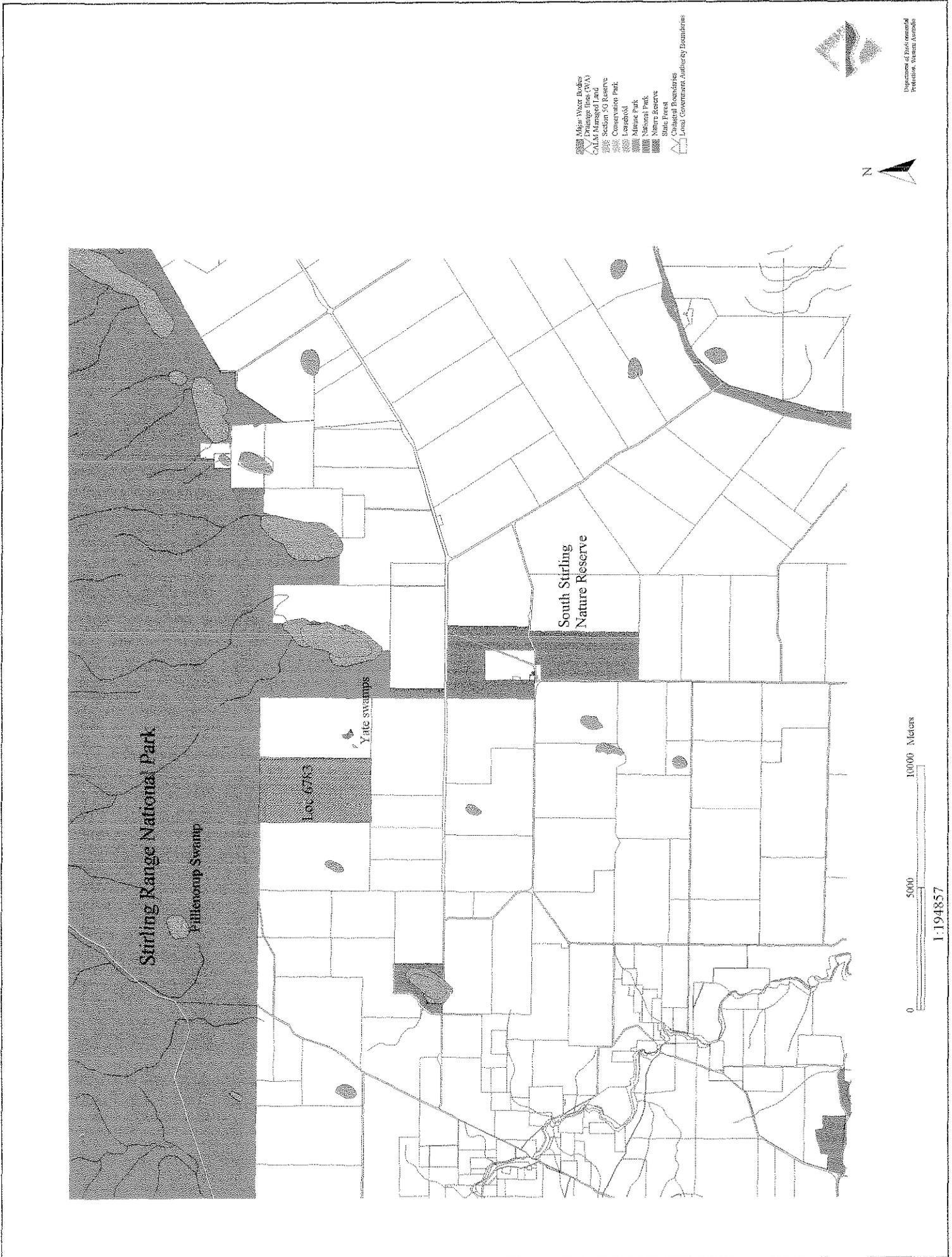


Figure 1b. Locality plan

Figure 2. Plan of Location 6783 showing area proposed to be cleared.

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

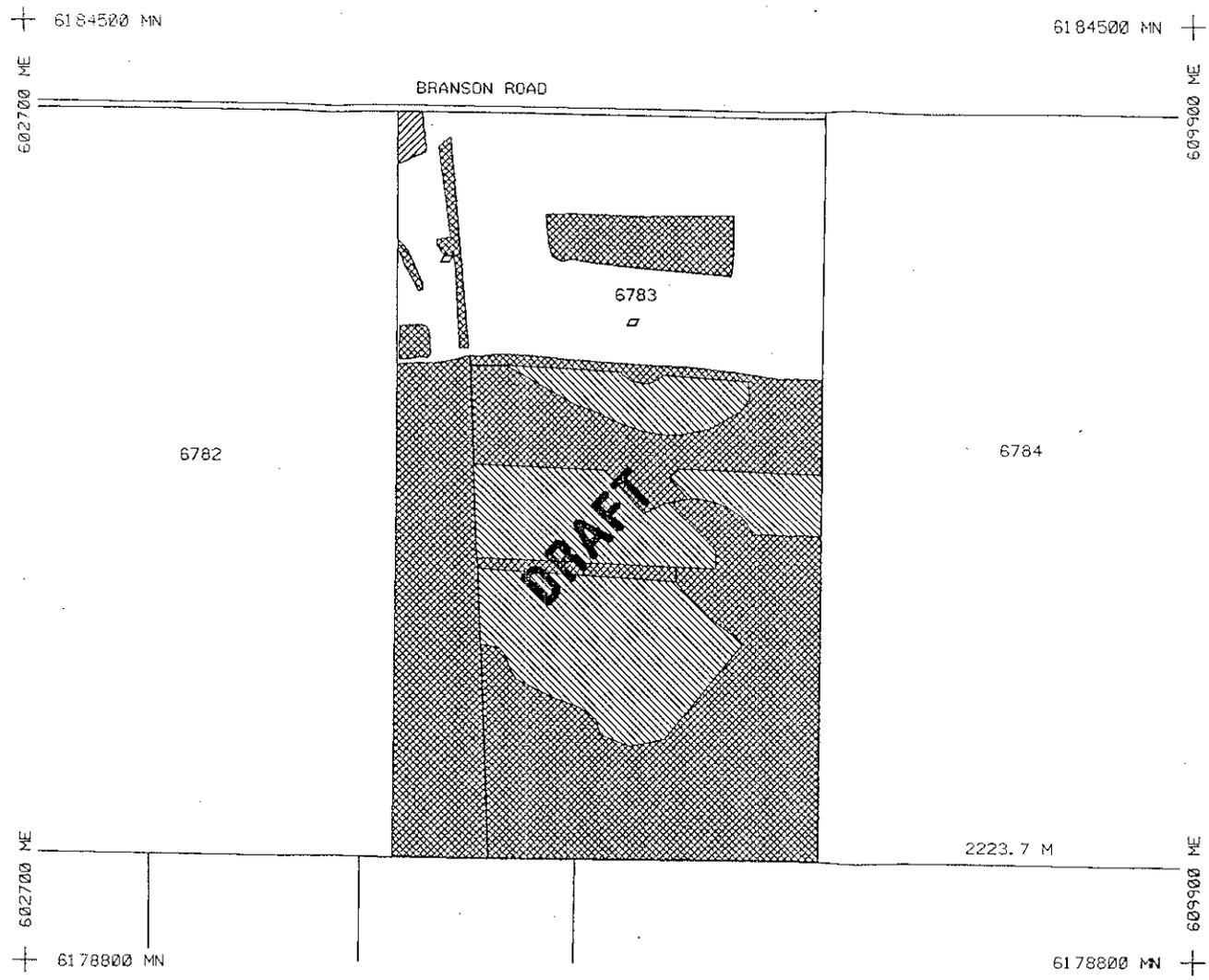
COMPANY SECRETARY : DATE : / 1996

COMPANY :

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

..... DATE : / 1996

COMMISSIONER OF SOIL AND LAND CONSERVATION



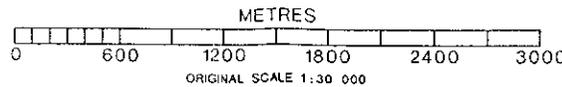
LEGEND:

- VEGETATION TO BE RETAINED AND PROTECTED AS NATIVE VEGETATION : 589 HA, 50%
- AREA OF OBJECTION TO CLEARING : 248.6 HA, 21%
- VEGETATION : 4.5 HA, 0.4%
- 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%



- 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. AMS ZONE - 50 60600 ME , 6102000 MN 2529 111 PLAN.DGN

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

Appendix 1

List of submitters

List of agencies, organisations and individuals who made submissions

Department of Conservation and Land Management

Water and Rivers Commission

Conservation Council of Western Australia Inc

Mr Graham Davies (proponent)

Appendix 2

References

References

- Agriculture Western Australia. (1997). *Memorandum of Understanding (MOU) between the Commissioner of Soil and Land Conservation, Environmental Protection Authority, Department of Environmental Protection, Agriculture Western Australia, Department of Conservation and Land Management, Water and Rivers Commission for the protection of remnant vegetation on private land in the agricultural region of Western Australia..* Agriculture Western Australia. Perth, WA.
- Agriculture Western Australia. (1997). *Land Assessment Report.* Agriculture Western Australia. Albany, WA.
- Commissioner of Soil and Land Conservation. (1996). *Hydrologist report-Clearing on Plantagenet Location 6783.* Agriculture Western Australia. Perth, WA
- Commissioner of Soil and Land Conservation. (1997). *Report from the Commissioner.* Agriculture Western Australia. Perth, WA.
- Craig, G. (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.
- Safstrom, R and Craig, G (1996). *Environmental evaluation of native vegetation in the wheatbelt of Western Australia - Principles and criteria used to appraise land clearing proposals.* Department of Environmental Protection.. Perth, WA.
- Agriculture Western Australia; Department of Conservation and Land Management; Department of Environmental Protection and Water and Rivers Commission. (1997) *Western Australia Salinity Action Plan..* Government of Western Australia. Perth, WA.

Appendix 3

Proponent's submission on the CER

Typed copy of Mr G R Davies original handwritten submission on the CER

G R Davies
14 Middleton Road
ALBANY WA 6330

14 - 10 - 97

Assessment 1016
Your Reference. 77/96

The Director
Evaluation Division
Dept of Environmental Protection, Perth.

Dear Sir,

Thank you for your letter of 3 Oct 97, and the copy of the CER. Bearing in mind that this is the first time I have seen most of the information in the CER and was unaware of the Memorandum of Understanding or the invitation to comment from 18 Aug 97 to 12 Sept 97, I most certainly wish to accept your invitation to comment now.

The author(s) of the Preliminary Assessment Report seem to have been overly obsessed with the figures used in section 3.2 "Water", which indicate that if I proceed with the proposed clearing there will be a 3% increase in the rate or rise of the watertable translating to 6mm per year additional increase.

I searched the whole batch of documents contained in the CER package to find where these figures come from, and it appears that these figures first appeared in the Land Assessment Report of 12 July 96 written by J Lesson District Land Conservation Officer, in which they said at the bottom of page 4;

4 Salinity

"Given that the property is above a stagnant aquifer and the area is estimated to be 10,000ha. If 300ha is to be cleared this will have up to a 3% impact on the rate of groundwater rise per year. (This assumes agricultural practices undertaken do not utilise any of the annual rainfall)" and then on top of page 5.

"A nearby borehole (on another property) has shown that there is a rate of rise of the groundwater of 200mm per year, if the rate of rise is similar below Mr Davies property, the impact of the clearing could be an extra 6mm per year."

For the author(s) of the report to base their recommendations, on these figures and ignore what is in brackets is ridiculous. Of course the crops and pastures growing on the cleared land will use most if not all of the annual rainfall. Even in the odd wet year the surrounding bush will absorb and utilise some of the water that may soak off the cleared area.

It is well known that most of the water causing a rise in the local or regional watertable soaks into the deep sandy areas (known as recharge areas) where the rainfall water quickly soaks down out of reach of crops or pastures growing on this type of soil and therefore is not used. It is clear from

my proposal and the other information supplied by Agriculture WA and the Commissioner for Soil Conservation, that I do not intend to clear any of this type of country. Therefore I contend that the clearing as proposed would have a negligible impact on the local or regional watertable, as is stated clearly in the last sentence of the letter from Ruhi Ferdowsian, Research Hydrologist, to the Commissioner for Soil Conservation dated 20th November 1996.

The letter from Jeff Kite of the Water and Rivers Commission to Gary Williams of DEP, seems to be based on the same flawed figures and assumptions and is nothing more than a waste of paper.

It is true that a large part of the land south, east and west of my property is cleared, and within that cleared area are many sandy recharge areas that are contributing to the rising watertable. Some positive action to plant these areas to deep rooted perennial pastures, or fodder shrubs or trees will have far more effect on the local or regional aquifer than whether or not I clear 300ha, bearing in mind that even after clearing what is proposed I will still have over 900ha of bush out of a total of 2450ha, ie 36% of the total property, with 500ha of bush protected under a covenant. If all landholders in my area had 36% of their properties in bush there may not be a problem with rising groundwater and salinity.

Is the EPA saying to me that I must sacrifice my economic viability, by not clearing any more to compensate for the overclearing of others? - even though I do not propose to clear any land that will contribute significantly to the local or regional aquifer.

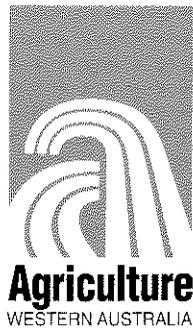
In conclusion I feel I must comment that the DEP/EPA contribution to this whole exercise has been time wasting and unhelpful and that in future proposals such as mine should be the sole province of AgWA and the Commission of Soil Conservation, who have the expertise and "on ground" knowledge to deal with them.

Yours faithfully

G R Davies

Appendix 4

**Comments from the Deputy Commissioner of Soil and Land
Conservation in relation to the proponent's submission**



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

Mr K Taylor
Director
Evaluation Division
Department of Environmental Protection
PO Box K822
Perth WA 6842

Our ref: 951236V01P0E
Enquiries: Mr J Dixon (08) 9368 3282
Date: 26 November 1997

Dear Sir

**PROPOSAL TO CLEAR NATIVE VEGETATION ON PLANTAGENET
LOCATION 6783 BRANSON ROAD, SHIRE OF PLANTAGENET
(ASSESSMENT 1016)**

In response to your letter of 22 October, 97 I believe that

- the submission from the landholder does not raise any issues not previously considered,
- the comments do not give cause for the Commissioner to alter previous conclusions,
- the statements made by the proponent are not always entirely accurate.

With respect to clearing of 300 hectares in a catchment of 10 000 hectares, Ms Lisson's 'assumption that agricultural practices do not use any of the annual rainfall' was in fact a worst case scenario.

The pertinent facts are:

1. The aquifer was in hydrological equilibrium while the catchment was covered with native vegetation. Effectively, this means that there would have been no aquifer recharge.
2. Crops and pastures do not use as much water as the native vegetation. In a 470 mm rainfall year, 12 mm of rainfall passes the crop/pasture root zone on loamy soils, and 50 mm on deep sandy soils. This water becomes aquifer recharge.
3. With 8000 hectares of the 10 000 hectare catchment cleared and under agricultural practices, aquifer recharge is occurring, resulting in a 200mm average annual rise in groundwater levels.

4. Clearing a further 300 hectares will increase the volume of water entering the aquifer each year.
5. Increasing the annual recharge to the aquifer will increase the rate at which the groundwater table rises and finds its new hydrogeological equilibrium.

Ruhi Ferdowsian commented:

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

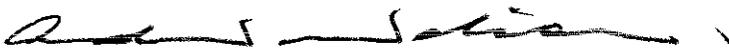
Mr Davies has taken this sentence out of context. He has used it to contend that his clearing will have 'negligible impact on the local or regional groundwater table.' However, Mr Davies has made no commitment to the conditions (farming practices) suggested by Mr Ferdowsian, (cereal/lucerne rotations).

The arguments Mr Davies draws about equity, and the fact that he may be asked to compensate for over clearing by others may or may not be valid. They are policy rather than technical issues and should be considered elsewhere.

Mr Davies is possibly unaware that the objection to clearing from the EPA Subcommittee is based on salinity only at this stage, since the EPA believed the arguments were sufficiently convincing. The EPA Subcommittee determined that clearing should not be permitted where this would lead to *any* increase in aquifer levels, no matter how small that increase might be. This would be contradictory to the thrust of the Salinity Action Plan.

The issues of nature conservation were specifically avoided by the Subcommittee but would have to be raised should the salinity argument be overruled.

Yours faithfully



Andrew Watson
DEPUTY COMMISSIONER
SOIL AND LAND CONSERVATION