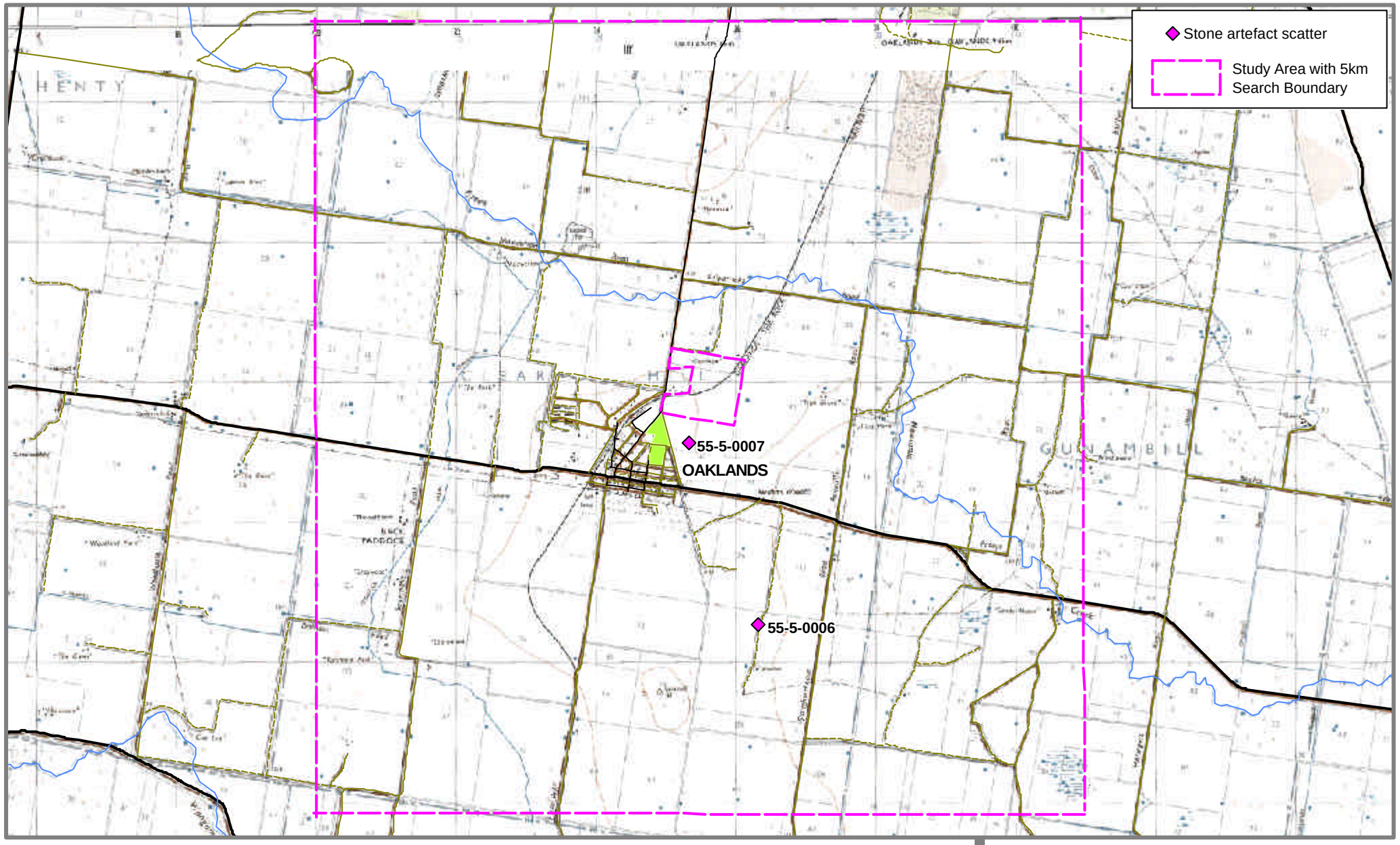
G:\GIS\Minor Projects\0051752\Fig4 AHS Oaklands.WOR 04 08 2006 Environmental Resources Management Australia Pty Ltd




0 2 4
Kilometres

Figure 4

Location of Aboriginal Sites (registered on AHIMS database), within 5 km of Study Area

Preliminary Environmental Assessment for
Proposed Ethanal Production Facility: Oaklands

## 5.7 NOISE

The nearest sensitive receptor is a rural residence located approximately 250 metres southwest of the site. Another rural residence is located approximately 1.0 km northwest of the proposed plant site. The Oaklands township is located approximately 1km to the southwest.

### 5.7.1 *Operational Noise*

Australian Ethanol Limited intends for all reasonable measures to be taken to prevent noise emissions for the proposed project. The likely noise generating activities from the proposed facility include:

- trucks accessing and egressing the site;
- staff vehicles accessing and egressing the site;
- milling of grain (using two rotary hammer mills) in an enclosed building as part of the milling and slurry preparation process; and
- external conveyors used throughout the process.

### 5.7.2 *Construction Noise*

Noise generating impacts expected to occur during the construction of the proposed plant include:

- heavy and light transport truck (in/out) in transit;
- clearing and grading;
- earthwork concrete preparation;
- aggregate processing;
- foundation grouting and positioning of large structures (e.g. building walls);
- facility construction; and
- trenching and earthwork.

### *5.7.3 Acoustic Assessment*

An acoustic report will be prepared for the proposed plant to assess the likely impacts of potential noise sources on the nearest residences. Noise sensitivity models will be assessed against the following criteria:

*Construction Noise Criteria*

The NSW EPA acknowledges that noise from construction sites is unavoidable and mitigation is often limited. The EPA's current view is that noise limits will not be set for most construction sites, but expect that all reasonable and feasible noise mitigation is applied. Construction noise is explicitly excluded from the EPA's Industrial Noise Policy (INP) (2000). The assessment criteria for construction noise set out in the Environmental Noise Control Manual ENCM (EPA, 1994) will be used.

*Operational Industrial Noise Criteria*

The NSW Government INP stipulates guidelines for assessment of noise from the operation of industrial facilities. The INP was specifically developed to provide a comprehensive assessment technique that complies with the POEO Act. Assessment criteria depend on the existing environment of areas potentially affected by the proposed development and will include both residential intrusiveness and residential amenity criteria.

The proposed facility will operate on a 24 hour basis and as such the acoustic assessment will take both 'day' and 'night' time criteria into account.

*Sleep Disturbance*

As the proposed facility will operate 24 hours per day, transient noise sources such as reversing alarms will be assessed for the potential to disturb the sleep of nearby residents. The EPA's Environmental Noise Control Manual indicates that to prevent sleep disturbance, the $L_{1\ 1min}$ noise level from an intrusive source should not exceed the background noise level by more than 15dB.

However, this criterion does not take account of more recent research on the effects on sleep of road traffic noise. The EPA's Environmental Criteria for Road Traffic Noise policy indicates that maximum noise levels below 50 - 55dB (A) within residences are unlikely to cause awakening reactions. If bedroom windows are open, this corresponds to an external maximum noise level of approximately 60 - 65 dB (A) at a residence

In our experience, adopting the more stringent Noise Control Manual criterion for the facility would be desirable in the first instance, and if exceedances are predicted, the EPA's more recent Road Traffic Noise criteria may be applicable.

## *5.8 VISUAL IMPACTS*

### *5.8.1 Existing Landscape*

The immediate visual catchment of the site is defined by a bulk grain storage and terminal on the mid-western boundary of the site, open agricultural cropping land to the north, Daysdale Street to the west, agricultural cropping land to the south, Oaklands township 1km to the south-west and sheep grazing to the east. An old railway line runs through the site from the northeast corner to the middle-western boundary of the site. The general area is flat rural agricultural land characterised by cropping and grazing and sparse rural development.

The property is currently agricultural land sown with barley with stands of trees at the boundaries. Access to the property is via Daysdale Street on the western boundary of the site.

### *5.8.2 Proposed Landscape*

Expected visual elements of the ethanol facility include the following items, landforms and activities:

- the plant and associated infrastructure as described in detail in *Section 2.1.2* in the east of the site;
- a grain storage building and distillation tower which will be the tallest structures on site with maximum heights of 35 metres;
- grain storage bunkers located adjacent to the main buildings;
- various smaller buildings associated with the production facility;
- various sealed roads, for access to and from the facility to deliver/receive goods and supplies;
- the forest plantation in the south of the site;
- a larger process water dam, with a capacity of up to 200 ML, adjacent to the production buildings; and
- an effluent storage dam located adjacent to the process water dam. This dam will have a capacity of approximately 30 ML and will be used to store effluent waste water from the facility.

### *5.8.3 Potential Visual Impacts*

Following inspections of the site and surrounds a number of locations were identified as potentially sensitive viewer locations. These include the rural properties immediately adjacent to the site. Two sensitive locations were identified as follows:

- Viewer Location 1: Oaklands township located approximately 1 km to the southwest of the site ; and
- Viewer Location 2: Vehicles using Daysdale Street.

Retention of the original vegetation will be included wherever possible in the facility design to minimise potential impacts on the visual amenity of the locality. The views from the residences to the northwest and southwest of the site are currently obstructed by vegetation along Daysdale Street.

Moderate visual impacts are expected to occur during the construction of the facility and establishment of the plantations. The following mitigation measures will be implemented to further minimise the extent of impacts upon visual amenity for the proposed construction works:

- plant and equipment will be kept to designated areas; and
- stockpiling will be carried out within the areas specified, i.e. no stockpiling outside of designated areas;
- the contractor will maintain the site in an orderly manner and will minimise the spread of materials stockpiles, waste and vehicle parking.

Moderate to low visual impacts are expected on the limited number of sensitive visual receptors during the operation of the plant.

The following mitigation measures will be implemented to further minimise the extent of impacts upon visual amenity for the operation of the proposed works:

- clearing of vegetation will be kept to a minimum, with trees along the boundaries of the site maintained wherever possible, in particular along the eastern boundary of the site where the most sensitive receptor is located;
- additional planting and maintenance of trees is proposed in the view shed of the operation, in the south of the site.

Other factors that are expected to limit the visual impacts of the proposed plant include:

- the proposed silos and grain storage bunkers will be similar to those on the adjoining property and at the Australian Wheat Board's grain storage terminal to the south-west of Oaklands and throughout the Murray Region;
- the Oaklands township located to the southwest of the site has distant views of the site, partially blocked by vegetation along the western boundary of the site; and
- only fleeting views of the site are visible from Daysdale Street due to vegetation.

Due to the above factors the proposal is expected to have a moderate to low visual impact on the surrounding area. A brief visual analysis will be completed as part of the EAR.

## *5.9 ECOLOGY*

Preliminary background literature reviews and database searches were undertaken to obtain information on flora and fauna species and vegetation communities likely to occur on the site or surrounding area. This included searches for threatened species listed under the *Threatened Species Conservation Act 1995 (*TSC Act*)* and Commonwealth EPBC Act previously recorded in the locality within a 10km radius of the site. Sources of information included the following:

- DEC Wildlife Atlas Database; and
- DEH online search for Matters of National Environmental Significance (NES).

The database searches indicated 13 threatened fauna species, 4 threatened flora species and 3 Commonwealth listed migratory species with the potential to occur within a 10 km radius of the site. Species identified under the TSC Act are shown in *Figure 5*.

The DEH online database indicated that the following Ramsar Wetland of international significance has been reported within 10 km of the site:

- *Fivebough and Tuckerbil Swamps*

The Fivebough and Tuckerbil Swamps are located near Leeton located approximately 40 km north of Oaklands.

The DEH and DEC online database indicated that the following four endangered ecological communities have been reported to have habitat available within 10 kilometres of the site:

- *Myall Woodland in the Darling Riverine Plains, Brigalow Belt South, Cobar Peneplain, Murray-Darling Depression, Riverina and NSW South western Slopes;*

- *Fuzzy Box Woodland on alluvial Soils of the South Western Slopes, Darling Riverine Plains and Brigalow Belt South Bioregions;*

- *White Box Yellow Box Blakely's Red Gum Woodland; and*

- *Buloke Woodlands of the Riverina and Murray-Darling Depression Bioregions.*

Historic and current land use for agricultural cropping has greatly modified the indigenous vegetation of the site. The current biological values are considered to be low. However, as a number of threatened species were identified within a 10 km radius of the site, the following will be carried out as part of the EAR:

- a site assessment to determine habitat type and the likelihood of the occurrence of the threatened species based on site habitat, including roosting, foraging and nesting habitat; and

- an assessment as to the significant impacts if the threatened species is found to likely occur on site.

Specifically any impacts on threatened species will need to be assessed by conducting an assessment of significance, as described in the Draft Guidelines for Threatened Species Assessment for applications assessed under Part 3A of the EP&A Act and this will be completed as part of the EAR.

## *5.10 INFRASTRUCTURE*

The proposed development is serviced with all necessary infrastructure.

- Potable water will be extracted from the Murray River via the O'Dwyer Main Channel. A pipeline will run from a pumping station at the channel, east across private property and to the plant site. An easement has been created for this purpose.

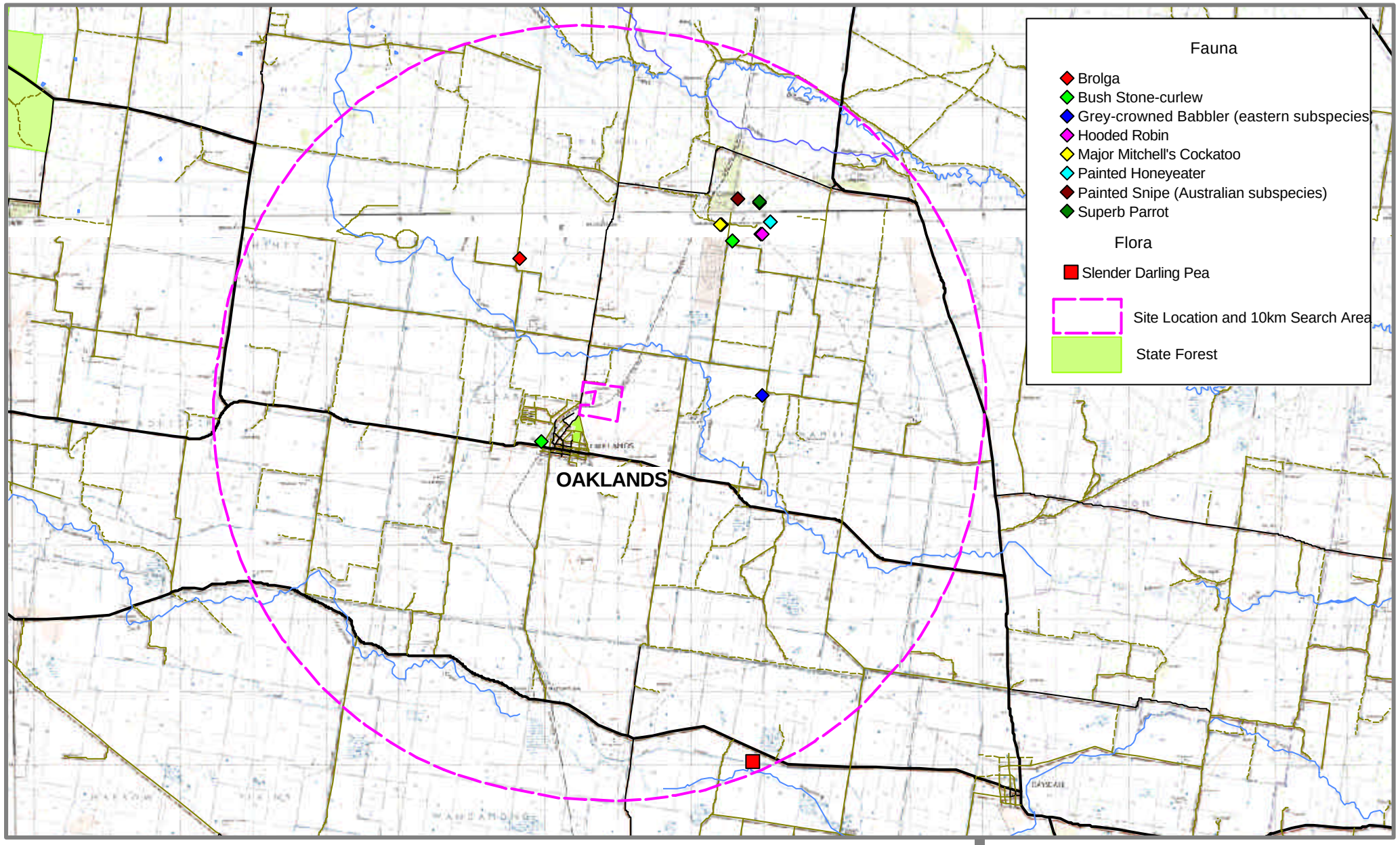
- A high security water licence will be sought for the plant from DNR. This will ensure an adequate supply of water for the production process and may at a later stage be converted to an industrial water licence.

- The channel is closed for maintenance and repair during the winter months. A 200ML dam will be required to store water for the production process over this period. The dam will be located on a nearby property adjacent to the channel to the west of the site. Process water will be pumped to a holding dam on-site, from which it will be used to fire the boiler, and for the process plant. The majority of process water is expected to be recycled back onto the production process via treated effluent reuse.

- The plant will require approximately 8ML of water per day.

- Country Energy supplies electricity to Oaklands township and surrounding areas.

G:\GIS\Minor Projects\0051752\Fig5 Threatened Species Oak.WOR.wor 04 08 2006 Environmental Resources Management Australia Pty Ltd




0 4 8
Kilometres

Figure 5

Threatened Species Previously Recorded within 10km of the Oaklands Site

- The site is connected to the local telecommunications network.
- Reticulated sewerage is not currently available to the site and is not required by the plant.

An assessment of the capacity of the above infrastructure to service the project will be completed as part of the EAR.

## *5.11 HAZARDS AND RISKS*

The proposed project will involve the production and storage of flammable substances including 10ML of ethanol, 400,000L petrol fuel and LPG fuel. The potential risks posed by these activities along with the proposed mitigation measures and emergency response protocols will be addressed in the EAR.

As the proposed project may be considered a 'potentially offensive industry' under SEPP 33, a preliminary hazard analysis will also be prepared as part of the EAR.

## *5.12 SOCIO-ECONOMIC IMPACTS*

Socio-economic benefits of the proposal include direct and indirect employment of local staff contractors, increased demand for locally grown grain (wheat, barley, corn) and a supply of wet distiller's grain as feed to farmers in the region. Approximately 40 full-time staff will be employed during the operation of the proposed plant. There will also be continued economic multiplier effects to local and regional businesses and industries over the longer term. The proposal will not reduce rural lands to an extent which would compromise local agricultural activity or production and will instead provide a valuable feed source for the intensive agriculture feedlots in the region.

Potential negative socio-economic impacts associated with the proposed ethanol production facility may relate to the acoustic amenity, water and air quality which without mitigation measures could have the potential to affect nearby residents and regional resources. Changed traffic conditions are expected in the local area during the operation of the plant and trucks entering and leaving the site may have an impact on nearby residents. These potential impacts will be addressed in the land use, acoustic and traffic assessments completed as part of the EAR.

Community consultation will be undertaken during the preparation of the EAR, targeting key community groups in Oaklands and the surrounding area and is likely to involve the following components:

- preparation of information newsletters that will be distributed to key community groups and adjacent residents to provide information and updates relevant to the project and invite comment; and

- organisation of a community information session to provide information and field questions from the local community.

If significant issues are raised, targeted consultation with relevant groups or residents would be conducted.

## *5.13 ECOLOGICALLY SUSTAINABLE DEVELOPMENT*

Australia's National Strategy for Ecologically Sustainable Development (NSESD) 1992 (NSESD) defines ecologically sustainable development (ESD) as:

> *"using, conserving and enhancing the community's resources so that ecological processes, on which life depends, are maintained, and the total quality of life, now and in the future, can be increased".*

Bio-fuels, such as ethanol, produced from cereal grains, wood or sugarcane can be a greenhouse-neutral, renewable energy source for use in transport vehicles, stationary engines, and small electricity generators. Ethanol also lowers vehicle exhaust emissions that are ozone damaging, degrade air quality and represent a threat to human health.

Bio-fuels have the potential to be greenhouse-gas neutral (depending on the feedstock), as atmospheric carbon is recycled into biomass through the carbon cycle. The proposed production of ethanol for Australia therefore has the potential to be environmentally sustainable.

An ethanol industry in Australia may reduce the reliance on imported fuels, improve domestic fuel productivity, reduce reliance on fossil fuels and create local employment.

The four principles of ESD as they relate to the proposed activity will be addressed within the environmental assessment. These principles include:

i. Conservation of Biological Diversity and Ecological Integrity- addresses the need to maintain ecosystem diversity, species diversity and genetic diversity within species.

ii. The Precautionary Principle - where there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.

iii. Intergenerational and Intragenerational Equity (between generations) - the present generation should ensure that the health, diversity and productivity of the environment are maintained or enhanced for the benefit of future generations. Intra-generational equity (within generations) requires that the economic and social benefits of development be distributed appropriately among all members of the community.

iv. Improved Valuation and Pricing of Environmental Resources - refers to the need to include environmental factors in the valuation of assets and services.

These principles have been paraphrased from the *Protection of the Environment Administration Act 1991*.

# 6 CONCLUSION

Australian Ethanol Limited proposes to establish an ethanol production facility at Oaklands in the Murray region of NSW with a production capacity of 200ML/year.

The development of an ethanol production facility and associated plantation will result in an environmentally sustainable development that utilises local produce and will have significant economic flow on effects to the Urana Shire.

The proposed hardwood plantation, the re-use of effluent to irrigate the plantation, and the sale of wet distiller's grain by-product all demonstrate the environmentally sustainable approach incorporated into the project.

All measures will be taken to ensure there are minimal impacts as a result of noise, air emissions, traffic and/or visual appearance.

This report sets out the proposed project, provides an overview of potential key issues and outlines the approach to the assessment of the issues in the EAR.

In summary the key environmental considerations identified in this preliminary assessment for the proposed facility at Oaklands are:

- surface water and flooding;
- groundwater quality;
- air quality and odour;
- noise and vibration;
- traffic and transport; and
- archaeology.

These issues will therefore be addressed in greater detail in the EAR. The potential impacts of the proposed facility on ecological, visual, and infrastructure issues will be addressed to a lesser extent in the EAR.

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