290 Baringhup-Havelock Rd
Baringhup West
Poultry Farm

Vegetation
and
Net Gain Assessment

A report to
Michael Vukadimovic

Prepared by

Mark Trengove **Ecological Services**
42 Aberdeen St Geelong West
PO Box 1502 Geelong 3220
mtrengove@pipeline.com.au
ph 03 52298087

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Mark Trengove Ecological Services
42 Aberdeen St Geelong West
PO Box 1502 Geelong 3220
mtrengove@pipeline.com.au
ph 03 52298087

1 INTRODUCTION

1.1 Project Background

Part of 290 Baringhup-Havelock Rd Baringhup West, is proposed to be developed for a poultry farm. This report was commissioned by Michael Vukadimovic to assess the quantity and significance of any indigenous flora and fauna habitat that might be present in the subject site.

1.2 Objectives

The objectives of this investigation are to:

- Describe the flora values of the land.
- Evaluate the conservation significance of the land.
- Assess any potential impacts of the proposed development.
- Discuss the implications of relevant government policy and legislation.

1.3 Study Area

The study area is comprised of approximately 4.7 km^2 of land at 290 Baringhup-Havelock Rd Baringhup West, located within the Mount Alexander Shire.

The site is within the Victorian Volcanic Plains bioregion (NRE 2002) and is located within the North Central Catchment Management Authority region.

The site appears to have a history of agricultural disturbance.

The location of the study area is shown on Figure 1.

Figure 1. Location of study area, shown in thick red line.

1.4 Proposed Development

The proposed use is to establish a poultry farm at 3 sites (Farms 1, 2 and 3) and associated access roads. It is anticipated that the proposed use will impact upon an area of approximately 10 ha (including associated works disturbances) for each farm (a total of 30 ha), as shown on Figure 2.

Figure 2. Proposed development sites.

2 METHODS

2.1 Taxonomy

Scientific names for plants follow the Census of Vascular Plants of Victoria (Walsh and Stasjic 2007). Common names for plants follow the Flora of Victoria Vols 2-4 (Walsh and Entwisle 1994-1999).

2.2 Literature and Database Review

Relevant literature and databases, including data from the Department of Sustainability and Environment (DSE website i) and the Technical Support Maps for Local Government Authorities (DSE 2003) were reviewed.

2.3 Field Survey

The site was inspected on foot on the 25th of April and 1st of September 2013. The entire site was traversed. Records were taken of all indigenous and exotic vascular plant species. Observations were made of the existing habitat values.

2.4 Limitations

The assessment was conducted during autumn and spring, times of year that are suitable for the detection of most flora species likely to occur on site. Due to the mostly degraded nature of the study area, the site inspection is considered to be sufficient to assess the ecological values of the site. As a result there are not considered to be any significant limitations to the study.

The survey includes only vascular flora. As Net Gain assessments were not required (*refer to* 4.2) non-vascular flora (mosses, lichens, fungi, etc) were not recorded. Fauna was not surveyed.

2.5 Defining Significance

A number of criteria are applied in order to assess the significance of flora species, vegetation communities and faunal habitat. The definition of the criteria is detailed in Appendix 1.

2.6 Defining and Assessing Native Vegetation

Native vegetation in Victoria has been defined by DSE as belonging to three categories. These are:

Remnant Patch
Remnant patches of remnant native vegetation are composed of indigenous plant species considered part of a clearly definable EVC. Such vegetation includes understorey species of greater than 25% total understorey cover (excluding bare ground), and/or indigenous canopy trees with at least 20% projected foliage canopy cover. Assessment of remnant patch vegetation utilized the Habitat Hectare method (*see below*).

Scattered Trees
Scattered trees comprise indigenous trees with projected foliage canopy cover of less than 20% and a total cover of indigenous species (excluding bare ground) of less than 25%. Scattered trees are counted and their diameter at breast height (1.3m DBH). The class size of scattered trees (based on DBH) is determined by comparison to the relevant DSE EVC bioregional benchmark.

Degraded Treeless Vegetation
Degraded treeless vegetation comprises all other vegetation. This category includes treeless vegetation with less than 25% total cover of indigenous species, or treeless vegetation that has greater than 25% total cover of indigenous species (excluding bare ground) but is dominated by a small number of opportunistic native species that were unlikely to have been dominant prior to a disturbance event.

2.7 Habitat Hectares

Habitat Hectares is an accounting method for measuring habitat quality and quantity that has been developed by DSE for Net Gain Assessment. The habitat hectares approach is site based. Each site, or patch, consists of one EVC and one vegetation condition class. It is therefore uniform within limits.

Each site has a *habitat score* of between 0 and 100, with extensive intact vegetation having a theoretical score of 100. The habitat score has ten components: large trees, tree canopy cover, understorey, weediness, recruitment, organic litter, logs, patch size, neighborhood context and distance to core area.

Each site has a *habitat hectare value,* where the habitat score is multiplied by the area in hectares. For example, 6 ha of vegetation with a habitat score of 50 equals 3 habitat hectares.

3 RESULTS

3.1 Ecological Vegetation Class

Ecological Vegetation Classes (EVCs) are the primary level of classification of vegetation communities within Victoria. An EVC contains one or more plant (floristic) community, and represents a grouping of vegetation communities with broadly similar ecological attributes. Classification of EVCs in this report follows Oates and Taranto (2002).

The pre-1750 EVC mapping of the study area undertaken by DSE (DSE website i) indicates that the study area was comprised of EVC 55 Plains Grassy Woodland. EVC 55 Plains Grassy Woodland is currently listed as 'Endangered' in the Victorian Volcanic Plain bioregion (DSE website ii- EVC Benchmarks -Victorian Volcanic Plains Bioregion). The current study records areas of vegetation that accords with this EVC. Refer to Figure 2 for DSE 2005 EVC mapping.

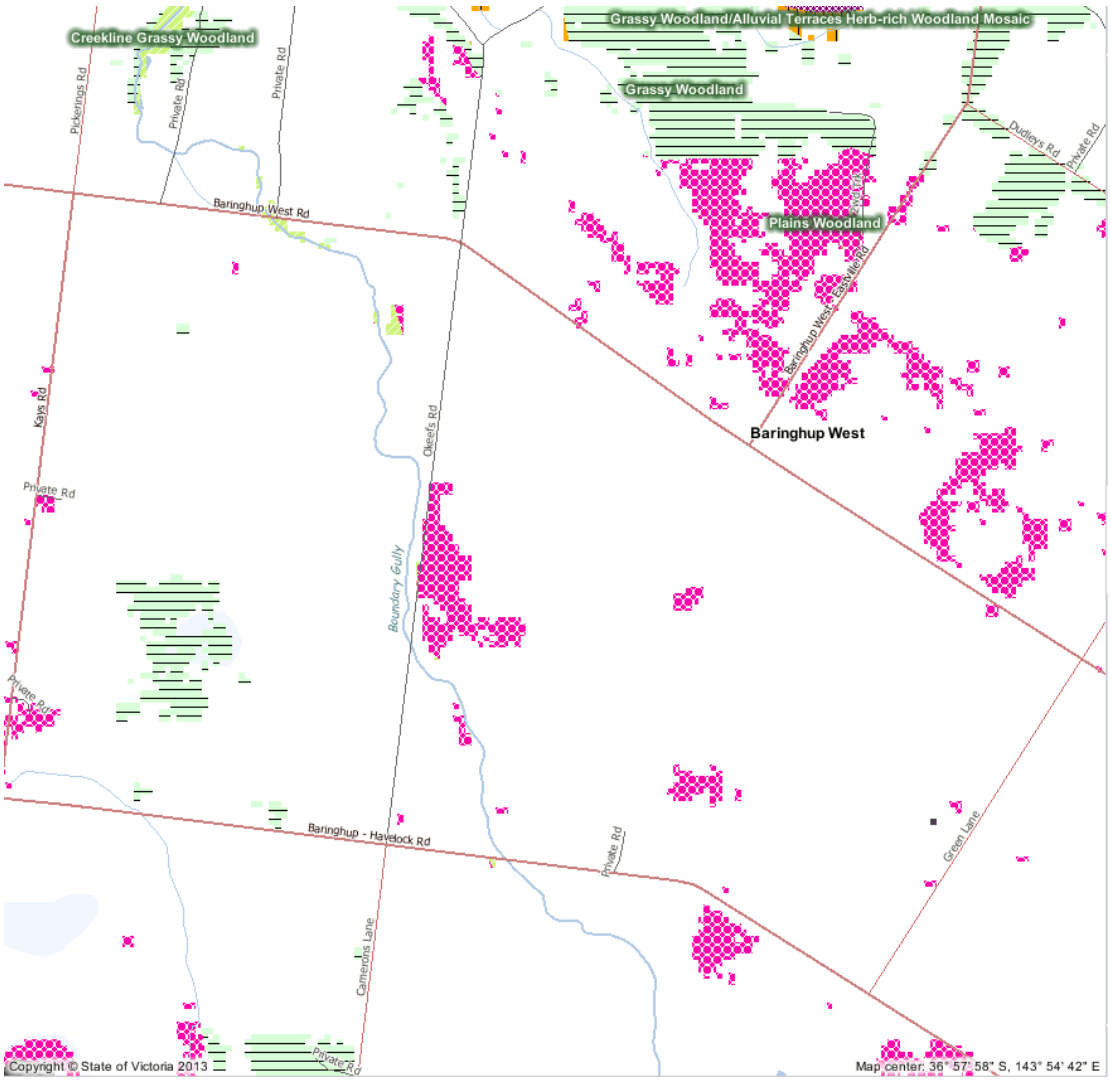

Figure 2 EVC Mapping. Extant vegetation 2005 (DSE data). Recorded extant EVC 55 Plains Grassy Woodland vegetation is mostly associated with the drainage lines. Note that the areas of 2005 extant EVC vegetation do not accord with the proposed development sites.

3.2 Flora

A total of 5 indigenous plant species were recorded from the study area (impact sites). Refer to Table 1 for a list of the indigenous vascular plant species recorded during this survey and conservation significance. Refer to Table 2 for a list of exotic vascular plant species recorded during this survey.

Table 1 Indigenous Species Recorded September 1 2013, Location and Significance

Botanical Name	Common Name	Conservation Significance	Location		
			Farm 1	Farm 2	Farm 3
Austrodanthonia penicillata	Wallaby-grass	Local	*	*	*
Austrostipa bigeniculata	Kneed Spear-grass	Local			*
Homophlois proluta	Rigid Panic	Local	*	*	*
Juncus subsecundus	Finger-rush	Local			*
Oxalis perenanns	Grassland Sorrel	Local	*		*

Table 2 Dominant Exotic Plant Species Recorded September 1 2013

Botanical Name	Common Name
Aveana fatua	Wild Oat
Carduus pycnocephalus	Slender Thistle
Cirsium vulgare	Spear Thistle
Cynara cardunculus	Artichoke Thistle
Dactylis glomeratus	Cocks-foot
Hypochaeris radicata	Flatweed
Lolium sp	Rye Grass
Rapistrum rugosum	Giant Mustard
Triticum sp	Wheat

3.3 Significant Plant Species

No species were recorded that are of National, State or Regional conservation significance.

All of the 5 indigenous species are considered to be of local conservation significance.

3.4 Vegetation Condition

The vegetation existing conditions for the proposed development sites is described as follows.

Farm 1

Farm 1 appears to have been disturbed at some time in the past due to intensive farming practices, including de-rocking. It is comprised mostly of exotic vascular flora. Some areas of Wallaby-grass and Rigid Panic occur at <25% cover value. This site is assessed to be 'degraded treeless' vegetation (*refer to* 4.2).

Farm 2

Farm 1 appears to have been disturbed at some time in the past due to intensive farming practices, including de-rocking. It is comprised mostly of exotic vascular flora. Some areas of Wallaby-grass and Rigid Panic occur at <25% cover value. This site is assessed to be 'degraded treeless' vegetation (*refer to* 4.2).

Farm 3

Farm 3 Farm 1 appears to have been disturbed at some time in the past due to intensive farming practices. Some areas of natural basaltic rock remain. It is comprised mostly of exotic vascular flora. Some areas of Spear-grass, Wallaby-grass and Rigid Panic occur at <25% cover value. Non-vascular bryophytes (Lichens) were observed to occur on the natural rocks. This site is assessed to be 'degraded treeless' vegetation (*refer to* 4.2).

Refer to Figure 2 for the location of Farm sites.

Refer to Plates 1-6 for photographs of the vegetation/habitat for the study area.

4 LEGISLATION AND GOVERNMENT POLICY

4.1 Commonwealth

4.1.1 Environment Protection and Biodiversity Conservation Act (1999)

The Environment Protection and Biodiversity Conservation (EPBC) Act (1999) was **e**stablished to 'promote the conservation of biodiversity by providing strong protection for listed species and communities in the Commonwealth and for protected areas, Ramsar sites, Commonwealth Reserves, conservation zones and World Heritage sites, etc'.

Grassy Eucalypt Woodland of the Victorian Volcanic Plain is an ecological community that is listed as 'Critically Endangered' under the EPBC Act (EPBC Website i). The larger study still carries vegetation that is considered part of this community.

4.1.2 Implications

Due to the degraded nature of the study area (i.e. less than 25% cover value), combined with the relatively small and fragmented nature of the remnant vegetation/habitat there are not considered to be any implications for the current proposal under the EPBC Act.

4.2 Native Vegetation Management Framework

4.2.1 Net Gain

Net Gain is the Victorian Government's framework for achieving native vegetation 'gains' across the state. The framework is defined in the document 'Victorian Native Vegetation Management - A Framework for Action the Framework)' (DNRE 2002) and is achieved in conjunction with the Native Vegetation Plan for the Port Phillip and Westernport Region (Port Phillip and Western Port Native Draft Vegetation Plan -Port Phillip and Westernport Catchment Management Authority 2006). Net Gain is described as 'the outcome for native vegetation and habitat where overall gains are greater than overall losses and where individual losses are avoided where possible. Losses and gains are determined by a combined quality/quantity measure and over a specified period of time. Gains may be either required offsets for permitted clearing actions or as a result of land holder and Government assisted efforts that are not associated with clearing' (DNRE 2002).

The stated goal of the framework is to achieve:

> *A reversal, across the whole landscape, of the long-term decline in the extent and quality of native vegetation, leading to a Net Gain* (DNRE 2002).

The three-step approach to net gain is to:

1. avoid adverse impacts, particularly through vegetation clearance
2. if impacts cannot be avoided, minimize impacts through appropriate consideration in the planning process
3. identify appropriate offset options.

Implications

The three sites of potential disturbance (Farm1, Farm 2 and Farm 3 and associated access routes) all contain relatively degraded indigenous vegetation that has <25% cover value of indigenous vegetation and are therefore assessed as 'degraded treeless' vegetation. Therefore there are no Net Gain implications under State legislation.

4.3 Local Planning Scheme

There are no overlays relevant to vegetation/habitat protection for the study area within the Mount Alexander Shire Planning Scheme (DCPD Website i).

4.4 Listed Significant Species

The DSE database (DSE Website i) lists four significant plant species and five significant fauna (bird) species as having been recorded as occurring within the study area or the immediate vicinity of the study area (i.e. within the study area and 5 kilometers beyond the study area).

Two of the listed plant species (Bulloke and Spiny Rice-flower) occur within the larger study area. However these species are not proposed to be impacted upon.

Due to the degraded and fragmented condition of the study area, the study area (proposed impact area) is assessed to represent the remaining 50% habitat value for all of the 9 recorded significant species.

Refer to Table 3 for the listed significant species including a discussion of preferred habitat, likelihood of occurrence and response to the Framework requirements.

Table 3 Listed Significant Flora and Fauna Species and the Likelihood of Occurrence

Scientific Name	Common Name	Status	Steps	Best/ Remaining 50%	Preferred Habitat	Likelihood of occurrence
Plants						
Allocasuarina luemanii	Bulloke	?	A-D-F-No.	Remaining 50%.	Yes	Unlikely to occur. Too degraded./Several specimens occur within the larger study area. None are proposed to be impacted upon.
Cullen tenax	Rough Scurf-pea	e, FFGA	A-D-No	Remaining 50%.	Yes	Unlikely to occur. Too degraded.
Pimelea spinescens ssp spinescens	Spiny Rice-flower	CR, v, FFGA	A-D-F-No	Remaining 50%.	Yes	Unlikely to occur. Too degraded./Several specimens occur within the larger study area. None are proposed to be impacted upon.
Ptilotus erubescens	Hairy Tails	?	A-D-No	Remaining 50%.	Yes	Unlikely to occur. Too degraded.
Birds						
Ninox connivens connivens		e, FFGA	A-D-No	Remaining 50%.	Forest	Unlikely to occur. Not suitable habitat.
Circus assimilis	Spotted Harrier	n	A-D-No	Remaining 50%.	Yes	Unlikely to occur. Too degraded.
Falco subniger	Black Falcon	v	A-D-No	Remaining 50%.	Yes	Unlikely to occur. Too degraded.
Ardea modesta	Eastern Great Egret	v, FFGA	A-D-No	Remaining 50%.	Wetlands/ rivers	Unlikely to occur. Not suitable habitat.
Egretta garzetta nigripes	Little Egret	e, FFGA	A-D-No	Remaining 50%.	Wetlands/ rivers	Unlikely to occur. Not suitable habitat.

Conservation Status:
? not known, however species is mapped as a listed species
n – near threatened (Victoria)
e – endangered (Victoria)
CR – critically endangered (Australia)
v – vulnerable (Victoria)
FFGA – Flora and Fauna Guarantee Act listed (DSE website iii)
(DSE website iii).

4.5 Victorian Native Vegetation Permitted Clearing Regulations

The State is due to introduce new Native Vegetation Permitted Clearing Regulations (to replace the Framework). The reforms 'introduce a risk based approach to assessing applications to remove native vegetation' (DEPI Website i). Refer to Figure 4 for the distribution of vegetation in the study area according to 'Location Risk'.

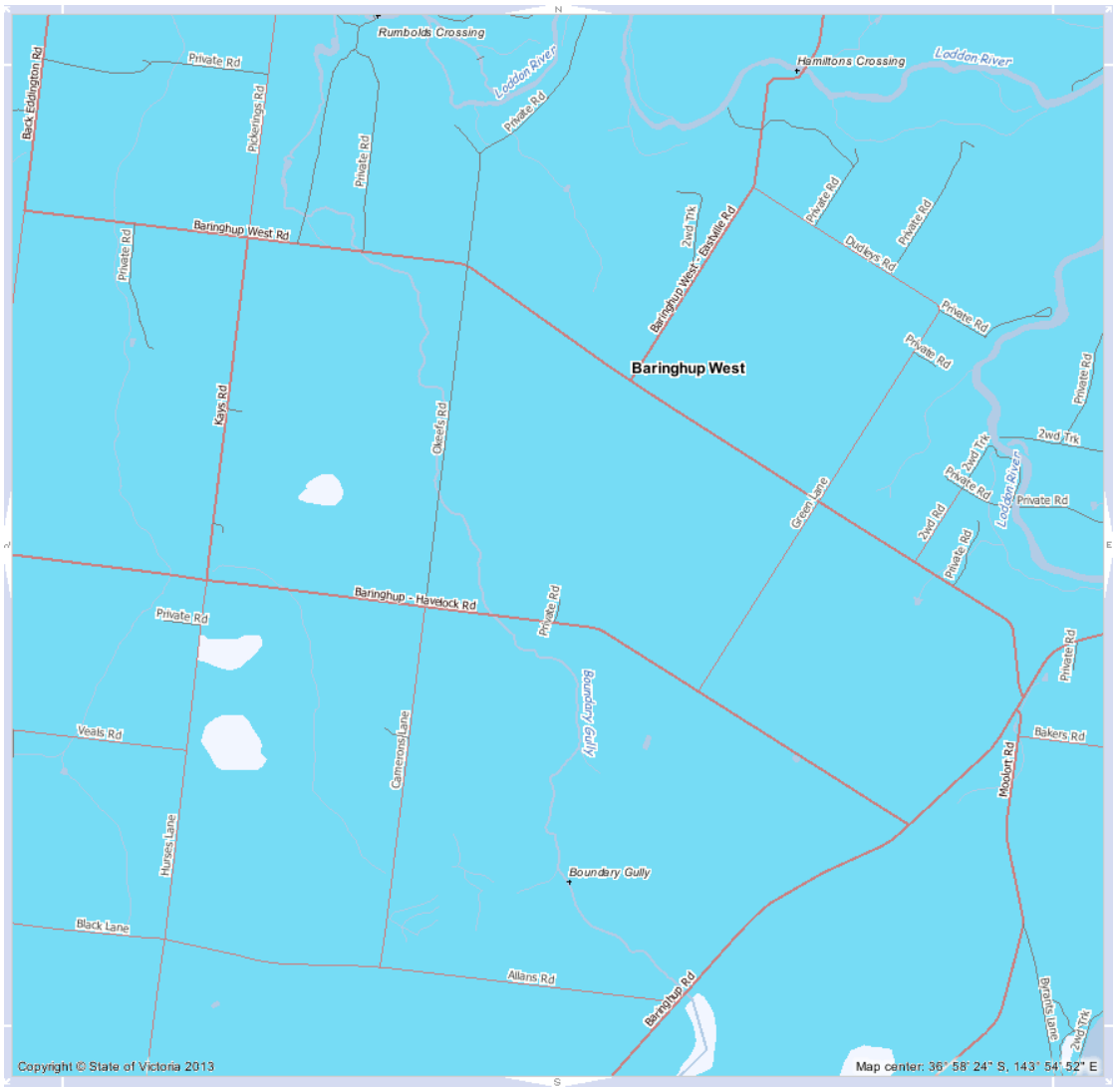

Figure 4. Distribution of vegetation according to 'Location Risk'. Blue equates to 'Location Risk A' (i.e. Least Risk). (DSE Website i). The proposed impacts are sited within areas of Location A.

Implications

While the Native Vegetation Permitted Clearing Regulations are not gazetted at the present time, DSE mapping (Native Vegetation Location Risk - DSE Website ii) indicates that the vegetation proposed to be removed is within 'Location A'. A permit to clear less than 1 ha of 'Location A' vegetation would not be refused based upon this mapping. A permit to clear more than 1 ha (as is the case with this proposal) would require further information prior to a permit being granted. The information contained in this report is sufficient for that purpose.

5 CONCLUSIONS

The poultry farm development site at 290 Baringhup-Havelock Rd Baringhup West, that is the subject of this report, contains the following vegetation:

- 'Degraded treeless' vegetation (Farms 1, 2 and 3).
- Remnant 'patch' vegetation (outside the proposed development areas).

A total of 5 locally significant plant species were recorded for the development areas.

There are no Net Gain implications for the proposal.

Although EVC 55 Plains Grassy Woodland is classed as 'Endangered' in the bioregion and Grassy Eucalypt Woodland of the Victorian Volcanic Plain is classed as "Critically Endangered' in Australia, the vegetation of the study area impact sites is not of sufficient quality or size/habitat value to create any implications for the relevant State (i.e. Native Vegetation Management Framework) or Commonwealth (i.e. EPBC Act) legislation.

There are no implications for the proposal under the relevant Planning Scheme Overlays.

Due to the degraded and fragmented condition of the study area, the study area is assessed to represent the remaining 50% habitat value for all of the 9 recorded significant species.

The field work for this study was undertaken in autumn and spring. There are not considered to be any significant limitations to this study.

Appendix 1 - ASSESSING CONSERVATION SIGNIFICANCE

Conservation significance is assessed at a range of scales, including global, international, national, state, regional and local. Criteria used for determining the conservation significance of flora and fauna at national to local scales are presented below for botanical and zoological conservation significance.

Botanical Significance

National botanical significance applies to an area when it supports one or more of the following attributes:

a population of at least one nationally threatened plant species listed by Briggs and Leigh (1996) or plant species listed on the schedules to the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*.

A nationally threatened ecological community listed on the schedules of the *Environment Protection and Biodiversity Conservation Act 1999*.

State botanical significance applies to an area when it supports one or more of the following attributes:

A population of at least one plant species threatened in Victoria, as listed by Gullan et al. (1990), NRE (2000a) or more recently in the unpublished records of the Flora Information System (NRE), or on the schedules to the Victorian *Flora and Fauna Guarantee Act 1988*.

An ecological community considered threatened in Victoria through its listing on the schedules of the *Flora and Fauna Guarantee Act 1988*.

Regional botanical significance applies to an area that supports one or more of the following attributes:

Supports a population of one or more regionally depleted species defined in a valid regional assessment of biodiversity (eg. Regional Native Vegetation Plan, Environment Conservation Council Report or Comprehensive Regional Assessment documents).

An ecological vegetation class that is considered endangered or vulnerable in a particular bioregion (based on Conn 1993 and the Regional Native Vegetation Plan), in which case the area is of **High Regional** significance.

An ecological vegetation class that is considered depleted in a particular bioregion (based on Conn 1993 and the Regional Native Vegetation Plan), in which case it is of **Regional** significance.

Local botanical significance applies to all remnant native vegetation that does not meet the above criteria. In much of Victoria, and in particular in the Victorian Volcanic Plain bioregion, native vegetation has been so depleted by past clearing and disturbance that all remaining vegetation must be considered to be of at least local conservation significance.

6 REFERENCES

DEPI Website i.
http://www.depi.vic.gov.au/environment-and-wildlife/biodiversity

DNRE (2002) 'Victoria's Native Vegetation Management A Framework for Action' DNRE, Melbourne.

DPCD website i.
http://planningschemes.dpcd.vic.gov.au/schemes/mountalexander

DSE (2003) 'Victoria's Native Vegetation Management- A Framework For Action- Technical Support Maps' (CD). DSE, Melbourne.

DSE (2007). 'Native Vegetation Guide for assessment of referred planning permit applications'. DSE, Melbourne.

DSE Website i.
http://mapshare2.dse.vic.gov.au/MapShare2EXT/imf.jsp?site=bim

DSE Website ii.
http://www.dse.vic.gov.au/dse/nrence.nsf/LinkView/A2A7B7D2CABBEE3CCA256F2B000257048062D358172E420C4A256DEA0012F71C

North Central Catchment Management Authority (2005) 'North Central Native Vegetation Plan' NCCMA Website.

Oates, A. & Taranto, M. (2001): 'Vegetation mapping of the Port Phillip &Westernport region' Arthur Rylah Institute for Environmental Research, DNRE, Victoria.

Parkes, D., Newell, G. & Cheal, D. (2003): 'Assessing the quality of native vegetation: The habitat hectares approach. Parks, Flora & Fauna Division, DNRE, Victoria.

Walsh, N G and Stasjic, V (2007): 'A Census of the Vascular Plants of Victoria' Royal Botanic Gardens, Melbourne.

Walsh, N G & Entwisle, T (1994-1999): 'Flora of Victoria Vol 2-4' Inkata Press, Melbourne.

Plates 1 –6 Study Area Photographs

Farm 1 typical conditions. De-rocked and mostly exotic vegetation.

Farm 2 typical conditions. De-rocked

Farm 3 typical conditions most of site. De-rocked.

Farm 3 western sector typical conditions. Predominately exotic plant species. Scattered ‘natural rock’ and indigenous plants species.

Remnant Bulloke, located within the study area, outside of impact areas.

Remnant Kangaroo Grass (*Themeda triandra*), located within the study area, outside of impact areas.