
Appendix J

Flora and Fauna Supplementary Report



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WSN Environmental Solutions

Jacks Gully Alternative Waste Treatment Facility

Addendum to Flora and Fauna Assessment

Report

March 2006



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1. Introduction

A flora and fauna assessment for the proposed Alternative Waste Treatment Facility at Jacks Gully was undertaken by Eco Logical Australia Pty Ltd in September 2004. The report assessed potential impacts based on the building footprint of the facility. Since that time additional detailed design for the facility has identified the need for the building pad to be extended to the west. This will require a battered slope to extend into 0.3 ha of previously unassessed area, to the west of the proposed platform, as shown on Figure 1-1.

The purpose of this report is to:

- » Document the condition and extent of the flora and fauna of this 0.3 ha of additional area;
- » Determine the presence or likely presence of threatened species or endangered ecological communities listed under the NSW *Threatened Species Conservation Act 1995* (TSC Act) and the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) of occurring on the site;
- » Assess the likely impacts associated with the proposed development; and
- » Provide recommendations and / or mitigation measures.



Figure 1-1 Proposed site layout

2. Methodology

Eco Logical Pty Ltd assessed vegetation communities and condition immediately adjacent to the existing platform. These data and the background information contained within their report, including database searches, were used to provide the basis for this study.

A field visit to the proposed area was undertaken on 6 July 2005 and the findings of the previous report ground-verified and confirmed. Opportunistic fauna sightings were also recorded during the four-hour field visit, which focussed on the area affected by the platform batters, as illustrated in Figure 2-1.



Figure 2-1 Close up view of affected area (to west and southwest of platform)



3. Findings

3.1 Landform

The area proposed for the batter slope is currently a washed out gully area which has been heavily modified through previous waste facility activities. The steep nature of the existing slope means that run-off and erosive forces are currently widespread. The gully area continues along a flat channelised area to an access road and sedimentation pond 200 m further to the north-west.

3.2 Vegetation Community

3.2.1 Vegetation Condition

This area is heavily weed-infested and the dominant species are African Olive (*Olea africanum*) on the upper and lower slopes, Broad-leaved Privet (*Ligustrum lucidum*) and Lantana (*Lantana camara*). Other common weed species include (*Chloris gayana*), Kikuyu (*Pennisetum clandestinum*) and Purple Top (*Verbena bonariensis*). Erosion is also common feature of the area of the batter slope.

3.2.2 Cumberland Plain Woodland

The field investigation confirmed the presence of an area of regrowth Cumberland Plain Woodland (CPW) (Shale Hills Woodland) in the area of the proposed batter slope immediately to the west of the existing building platform. This community is listed as endangered under the TSC Act and the EPBC Act and would be removed as a part of this proposal. The majority of the vegetation present within this community is weed species and the Broad-leaved Privet is particularly common.

There are several small trees characteristic of the CPW (eg. Forest Red Gum (*Eucalyptus tereticornis*) none of which could be considered remnant indicating that this area had previously been cleared at some time in the past. Native understorey species were almost completely absent although there were scattered examples including Sydney Green Wattle (*Acacia parramattensis*), Blackthorn (*Bursaria spinosa*) and Maidenhair Fern (*Adiantum aethiopicum*).

3.2.3 Flora species

No formal flora survey was undertaken. However, neither this study nor Eco Logical (2004) reported either Rufous Pomaderris (*Pomaderris brunnea*) or the White-flowered Wax Plant (*Cynanchum elegans*) which are two threatened flora species known to occur Cumberland Plain Woodland. According to Eco Logical (2004) almost 70 % of flora species recorded were introduced weed species indicating the extent of the disturbance and modification of the existing landscape. This study verified this finding.



3.3 Fauna habitat

The area would potentially provide foraging habitat for a number of mobile species including microchiropteran bats and numerous common bird species. During the site inspection several common bird species were recorded including the Australian Raven (*Corvus coronoides*), Superb Fairy-wren (*Malurus splendens*) and the Sacred Ibis (*Threskiornis aethiopica*). Tracks indicate that the Eastern Grey Kangaroo (*Macropus giganteus*) uses the site as do both the European Red Fox (*Vulpes vulpes*) and Domestic Dog (*Canis familiaris*).

Several threatened fauna species have the potential to forage across the site and these may include several species of microchiropteran bats and the Grey-headed Flying Fox. The shell of the Cumberland Land Snail (*Meridolum corneovirens*) was found on the site by Eco Logical (2004) indicating that this species has, or may currently, use this site. A brief inspection found very little habitat currently available to this species on the site as there was little understorey, leaf litter or other debris.

3.4 Connectivity

The CPW is part of a larger patch of vegetation considered to be Cumberland Plain Woodland to the north-east grading into Sydney Coastal River Flat Forest in the south-west. The area of CPW to the north-east is progressively being cleared through infilling of the cells during land filling at the site and only the vegetation to the south-west of the site will remain. Consequently, this proposal will not further reduce connectivity.



4. Impact Assessment

The impact area is within the boundary of the Jacks Gully Waste Management Centre. As a consequence of this proposal approximately 0.3 ha of Cumberland Plain Woodland will be removed. This community is an endangered ecological community under the TSC Act and EPBC Act and would currently provide habitat for a number of fauna species, the vast majority of which could be considered common.

It also provides potential habitat for the Cumberland Land Snail which is an endangered species listed under the TSC Act. The degraded nature of the site is such that little remains of the understorey species and it is extremely unlikely that any threatened flora remains within this woodland area. Indirect impacts of this proposal could be increased erosion and spread of weeds during construction and operation.

However, management measures would be implemented to prevent such impacts.

4.1 Assessments under the EP&A Act

4.1.1 Part 5A assessment

Part 5A Assessments under the EP&A Act were undertaken to assess the significance of impacts on the Cumberland Plain Woodland and the Cumberland Land Snail (Appendix A). These tests concluded that this proposal would be unlikely to have significant impacts on the endangered ecological community or the Cumberland Land Snail due to the highly degraded and modified nature of the site.

Vegetation to the north-east of the proposal area is currently being removed through infilling of the land fill cells and removal of this vegetation would not isolate this area. Consequently it is considered that a Species Impact Statement is not required.

4.1.2 Part 3A assessment

For completeness of assessment *Step 5: Key Thresholds* of the *Draft Guidelines for Threatened Species Assessment* (DEC & DPI 2005) under Part 3A is also considered for this proposal and this is detailed below.

- » Whether or not the proposal, including actions to avoid or mitigate impacts or compensate to prevent unavoidable impacts will maintain or improve biodiversity values.

Removal of around 0.3 ha of Cumberland Plain Woodland will be unavoidable and this area has some potential to provide marginal habitat for the Cumberland Land Snail. It is currently weed infested and highly eroded in sections. Maintenance of this area in its current format would provide little value for overall biodiversity although clearing would remove some potential foraging habitat for common bird species.

Revegetation works on, or adjacent to, the waste management area is planned to provide visual amenity and increase suitable areas of habitat for flora and fauna. This would be undertaken with species that are locally native, including those representative



of Cumberland Plain Woodland. Removal of weed species and revegetation on and around the waste management area is likely to improve overall biodiversity values.

- » Whether or not the proposal, is likely to reduce the long-term viability of a local population of the species, population or ecological community.

There are approximately 28,175 ha of CPW remaining in western Sydney. The proposed works will impact on a small patch of highly degraded and modified CPW (approximately 0.3 ha). Additional CPW to the north-west of this study site is progressively being removed during landfilling activities associated with the current landuse. The understorey has undergone extensive disturbance including invasion by exotic species. In relation to the regional distribution of CPW, removal of this small, low quality patch is unlikely to reduce the long-term viability of this local endangered ecological community.

The shell of one Cumberland Land Snail has been recorded at the site. The proposal will result in the removal of 0.3 ha of degraded potential habitat for this species. However, additional areas of CPW are available to the south and east of this proposal area. The degraded nature of the site means that this area is unlikely to provide important habitat for this species and it is considered unlikely that this proposal will reduce the long-term viability of a local population of this species.

- » Whether or not the proposal is likely to accelerate the extinction of the species, population or ecological community or place it at risk of extinction.

The proposal involves removal of 0.3 ha of Cumberland Plain Woodland which is currently highly degraded and modified. Removal of this area is unlikely to further accelerate the extinction of either CPW or Cumberland Land Snail as it is currently highly degraded and modified and its removal will not isolate interconnecting areas of habitat.

- » Whether or not the proposal will adversely affect critical habitat.

No critical habitat for the Cumberland Plain Woodland or Cumberland Land Snail has been listed in the Register of Critical Habitat kept by the Director General of Department of Environment and Conservation.

4.2 Assessment under the EPBC Act

The Cumberland Plain Woodland is listed as an endangered ecological community under the EPBC Act. This community was considered under the Part 5A assessment undertaken in accordance with the EP&A Act. Six of the eight criteria provided under the EPBC Act *Administrative Guidelines for Significance* are similar to criteria used for assessment under the EP&A Act. Hence it is not considered that the proposal would:

- » Lead to long-term decrease in the size of a population;
- » Reduce the area of occupancy of species;
- » Fragment an existing population into two or more populations;
- » Adversely affect habitat critical to the survival of a species;
- » Disrupt the breeding cycle of the population; or



- » Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that a species is likely to decline.

Additional significant impact criteria include:

- » Result in invasive species that are harmful to an endangered species becoming established in the endangered species' habitat; or
- » Interfere with the recovery of a species.

This area is currently weed infested. Measures would be implemented to reduce the risk of invasive species becoming established after the area is cleared due to activities associated with the construction and operation of the waste management facility.

The recovery of the CPW and Cumberland Land Snail would not be impeded by this proposal. The area is highly modified and invasive weed species are abundant and it is unlikely to provide important habitat for the Cumberland Land Snail. Consequently, removal of the 0.3 ha area is unlikely to interfere with the recovery of the CPW or Cumberland Land Snail within the locality.



5. Recommendations

To limit any potential indirect impacts on adjacent flora, vegetation communities and fauna habitat the following recommendations are made:

- » Weeds should be controlled throughout the site to minimise their spread to adjacent areas;
- » Stabilisation of steep banks and bare earth areas should be undertaken as soon as possible after construction or removal of vegetation to limit gully and sheet erosion which could affect adjacent vegetation communities and watercourses;
- » Any revegetation works on, or adjacent to, the waste management area should be undertaken with species that are locally native including those representative of the Cumberland Plain Woodland.



6. References

Department of Environment and Conservation and Department of Primary Industries
2005 **Draft Guidelines for Threatened Species Assessment.** Hurstville, NSW.

Eco Logical Australia Pty Ltd 2004 **Jacks Gully Alternative Waste Treatment
Facility, Narellan. Flora and Fauna Assessment.** Report prepared for GHD Pty Ltd.



Appendix A

Part 5A Assessments under the EP&A Act



Part 5A Assessments under the EP&A Act

Pursuant to the NSW *Environment Planning and Assessment Act 1979* (EP&A Act) an assessment of the impacts of the proposed works on land that is critical habitat or is likely to significantly affect threatened species, populations or ecological communities, or their habitats must be undertaken. If Eight Part Tests conclude that a significant impact is likely on threatened species or endangered ecological communities, then a Development Application must be accompanied by a Species Impact Statement (SIS). The Eight Part Tests for this proposal are detailed below.

The Eco Logical Flora (2004) report was reviewed and those species and communities requiring an updated assessment in line with the increase in footprint of the proposal were identified and these were:

- » Cumberland Plain Woodland; and
- » Cumberland Land Snail (*Meridolum corneovirens*).

Although additional species, such as the Grey-headed Flying Fox, microchiropteran bats and two flora species also have the potential to make use of the site these species were not considered in this assessment as they had already been assessed in Eco Logical (2004).

Cumberland Plain Woodland

Cumberland Plain Woodland is an endangered ecological community listed under the TSC Act and EPBC Act. Given that a small heavily degraded area of this community will be removed as a consequence of this proposal an Eight Part Test has been undertaken.

a) *In the case of a threatened species, whether the life cycle of the species is likely to be disrupted such that a viable local population of the species is likely to be placed at risk of extinction.*

Not applicable to endangered ecological communities.

b) *In the case of an endangered population, whether the life cycle of the species that constitutes the endangered population is likely to be disrupted such that the viability of the population is likely to be significantly compromised.*

Not applicable to endangered ecological communities.

c) *In relation to the regional distribution of the habitat of a threatened species, population or ecological community, whether a significant area of known habitat is to be modified or removed.*

There are approximately 28,175 ha of CPW remaining in western Sydney. The proposed works will impact on a small patch of highly degraded and modified CPW (approximately 0.3 ha). Additional CPW to the north-west of this study site is progressively being removed during landfilling activities associated with the current landuse. The understorey has undergone extensive disturbance including invasion by exotic species. In relation to the regional distribution of CPW, removal of this small, low quality patch is unlikely to be significant.

d) *Whether an area of known habitat is likely to become isolated from currently interconnecting or proximate areas of habitat for a threatened species, population or ecological community.*

The CPW is part of a larger patch of vegetation considered to be Cumberland Plain Woodland to the north-east grading into Sydney Coastal River Flat Forest in the south-west. The area of CPW to the north-east is progressively being cleared through infilling of the cells during land filling at the site and only



the vegetation to the south-west of the site will remain. Consequently, this proposal will not further reduce connectivity.

e) Whether critical habitat will be affected

At present, no register of critical habitat is maintained by the Director - General of Department of Environment and Heritage.

f) Whether a threatened species, population or ecological community, or their habitats are adequately represented in conservation reserves (or other similar protected areas) in the region.

Approximately 4,278 ha (15% of the total remaining) of CPW is reserved in land zoned DEC Estate, Special Uses, Environmental Protection, and Open Space region (DEC 2002). This is considered an adequate representation in conservation reserves within the region.

g) Whether the development or activity proposed is of a class of development or activity that is recognised as a threatening process.

Vegetation clearance that results in habitat loss is listed as a key threatening process under the TSC Act. Approximately 0.3 ha of CPW will be cleared under the proposal.

h) Whether any threatened species, population or ecological community is at the limit of its known distribution

CPW occurs in the local government areas of Auburn, Bankstown, Baulkham Hills, Blacktown, Camden, Campbelltown, Fairfield, Hawkesbury, Holroyd, Liverpool, Parramatta, Penrith and Wollondilly (NSW Scientific Committee 1997).

Conclusion

The proposal will result in the clearing of 0.3 ha of CPW. This area has been heavily disturbed and is weed infested and is considered to be of low quality. Although it does currently form a connecting corridor to habitat in the north-east this area is progressively being cleared as a part of the waste management land filling operations. It is considered unlikely that removal of this CPW would have a significant impact on the long-term viability of CPW in the region. No further provisions of the EP&A Act or TSC Act need apply.

Cumberland Land Snail (*Meridolum corneovirens*)

The Cumberland Land Snail is listed as endangered under the TSC Act. The shell of one Cumberland Land Snail was been recorded at the site during previous surveys (Eco Logical 2004). Given that potential habitat for this species is present at the site an Eight Part Test has been undertaken.

a) In the case of a threatened species, whether the life cycle of the species is likely to be disrupted such that a viable local population of the species is likely to be placed at risk of extinction.

The shell of one Cumberland Land Snail was been recorded at the site. The proposal will result in the removal of 0.3 ha of degraded potential habitat for this species. However, additional areas of CPW are available to the south and east of this proposal area. The degraded nature of the site means that this area is unlikely to provide important habitat for this species and it is considered unlikely that the lifecycle of the species will be disrupted such that a viable local population would be placed at risk of extinction.



b) In the case of an endangered population, whether the lifecycle of the species that constitutes the endangered population is likely to be disrupted such that the viability of the population is likely to be significantly compromised,

There are no endangered populations of this species currently listed under Schedule 1 of the TSC Act.

c) In relation to the regional distribution of the habitat of a threatened species, population or ecological community, whether a significant area of known habitat is to be modified or removed,

The habitat of the Cumberland Land Snail is restricted to the Cumberland Plain in the Sydney Basin Bioregion where it has been recorded at over 100 locations (NSW Scientific Committee 1997).

Although potential habitat for this species occurs at the site, only 0.3 ha area would be cleared for the proposal. Larger and more intact areas of habitat are currently available to the south and east of the site. Therefore, the proposal is not likely to result in the removal of a significant area of known habitat in relation to the area of known habitat in the region.

d) Whether an area of known habitat is likely to become isolated from currently interconnecting or proximate areas of habitat for a threatened species, population or ecological community,

The CPW is part of a larger patch of vegetation considered to be Cumberland Plain Woodland to the north-east grading into Sydney Coastal River Flat Forest in the south-west. The area of CPW to the north-east is progressively being cleared through infilling of the cells during land filling at the site and only the vegetation to the south-west of the site will remain. Consequently it is considered that the proposal would not further isolate an area of known habitat from interconnecting areas of habitat.

e) Whether critical habitat will be affected

Currently no critical habitat has been identified for this species by the Director-General of National Parks & Wildlife Service.

f) Whether a threatened species, population or ecological community, or their habitats, are adequately represented in conservation reserves (or other similar protected areas) in the region

It is unknown whether the species or its habitat is adequately represented in conservation reserves. However, it is likely that this species is not adequately represented.

g) Whether the development or activity proposed is of a class of development or activity that is recognised as a threatening process,

Vegetation clearance that results in habitat loss is listed as a key threatening process under Schedule 3 of the TSC Act. The development will remove a small area of known habitat for the Cumberland Land Snail.

h) Whether any threatened species, population or ecological community is at the limit of its known distribution

The species is not at the limit of its distribution within the study area. The Cumberland Plain Snail is found in over 100 locations throughout the Cumberland Plain region of Western Sydney such as Blacktown, Baulkham Hills and Penrith (NSW Scientific Committee 1997).

Conclusion

The proposal will result in the clearing of 0.3 ha of potential habitat for the Cumberland Land Snail. This area has been heavily disturbed and is weed infested and is unlikely to provide habitat which would be



viable in the long term. Although it does currently form a connecting corridor to habitat in the north-east this area is progressively being cleared as a part of the waste management land filling operations. It is considered unlikely that removal of this CPW would have a significant impact on the Cumberland Land Snail. No further provisions of the EP&A Act or TSC Act need apply.



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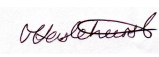
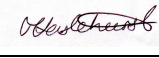
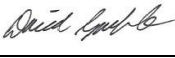
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