FLORA AND FAUNA ASSESSMENT
AND EIGHT PART TESTS OF SIGNIFICANCE

MINTO RENEWAL PROJECT

Prepared by
Jason Anderson B.App.Sc

For NSW Department of Housing

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Anderson Ecological Surveys Pty Ltd ACN 093 351 421 ABN 92 093 351 421
PO BOX 690 Springwood 2777 Ph: (02) 4758 9501 Fax: (02) 9383 8406

Executive Summary

This report has been undertaken to provide an eight part test assessment for the Minto Renewal project area. A previous study in March 2003 identified the only potentially significant area being Piggot Reserve, which contains remnants of Cumberland Plain Woodland species. The eight part test is based upon Piggot Reserve as previously there were no other potentially significant areas identified which contained any potential habitat for threatened species, populations or remnants of endangered ecological communities. The results of the Eight Part Tests of Significance indicate that there are unlikely to be any significant impacts on any threatened species, population or endangered ecological community and therefore a Species Impact Statement is not required. Referral to Environment Australia is not deemed to be required.

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1. INTRODUCTION

1.1 BACKGROUND

The Department of Housing engaged Anderson Ecological Surveys Pty Ltd to conduct an Eight Part Test of Significance for Piggot Reserve which was previously identified in the Preliminary Flora and Fauna Assessment report of March 2003 as the only area which would require an eight part test of significance if it were proposed for development. The proposal is to divide Piggot Reserve into allotments of approximately ¼ acre.

The study site for the previous limitations report entailed the precincts of Darcy, Caroline, Erskine, Fenton Piggot, Eagleview, Sarah, Campbellfield, Commercial, Luttrell, Goodwin, Dunlop and Friendship. Much of the area is residential development with other areas being parklands. Generally the residential development areas contain only a few trees. The only significant bushland area is located within Piggot Reserve on the north-eastern side of the study area.

1.2 SITE DESCRIPTION

1.2.1 Location

Piggot Reserve occurs on the north-eastern side of Minto.

1.2.2 Physical Environment

The land within the reserve is level and it is surrounded on the east, north and western sides by roads and other urban development.

1.2.3 Vegetation

The vegetation on site represents remnant species of what would have once been Cumberland Plain Woodland. Prior to the field work being undertaken a desktop study was carried out. This involved background searches of the New South Wales National Parks and Wildlife Service Atlas of NSW Wildlife for a 10 km grid centred on the study site. The following were also consulted; Native Vegetation Maps of the Cumberland Plain Western Sydney Interpretation Guidelines by NSW National Parks and Wildlife Services 2000, and Urban Bushland Biodiversity Survey, Flora and Fauna components 1997. The vegetation within Piggot Reserve has been mapped by NPWS (2000) as Shale Sandstone Transition Forest (High Sandstone Influence) Class A being greater than 10% crown cover and greater than 0.5 ha. The vegetation has been mapped by NPWS as other remnant vegetation and is not core habitat.

1.2.4 Fauna

There is negligible potential habitat on site for any threatened species other than the Cumberland Plain Land Snail however this was not detected in the previous or current assessment despite targeted surveys.

1.2.5 Invertebrates

The only invertebrate with any potential to occur is the Cumberland Plain Land Snail however the habitat is generally poor quality habitat for this species.

1.2.6 Aquatics

There is no significant aquatic habitat present. As such no consideration is deemed to be required for any threatened species under the Fisheries Management Act (1994) as none have potential to be impacted.

1.3 LEGISLATIVE REQUIREMENTS

This study and report was undertaken with reference to the requirements of the *NSW Environmental*

Planning and Assessment Act (1979), the *NSW Threatened Species Conservation Act (1995)*, the *NSW Fisheries Management Act (1994)* and the *Commonwealth Environmental Protection and Biodiversity Conservation Act (1999)*. Final determinations of the NSW Scientific Committee (both NSW NPWS and Fisheries) and the Commonwealth Scientific Committee are current to the time of writing. Reference was also made to State Environmental Planning Policy 44 (SEPP 44) Koala Habitat.

1.4 BACKGROUND SEARCHES AND LITERATURE REVIEW

Prior to the field work being undertaken a desktop study was carried out. This involved background searches of the New South Wales National Parks and Wildlife Service Atlas of NSW Wildlife and the Environment Australia Online Database (Environment Australia June 2003) for a 10 km grid around the site.

2. FLORA ASSESSMENT

2.1 FLORA - INTRODUCTION

A detailed botanical survey of the area was carried out in order to document the vegetation communities present on the site. The botanical survey was carried out on the 7th of March 2003 with additional surveys carried out during February 2004.

2.2 FLORA - METHODOLOGY

2.2.1 Field Survey Methods

The methodology used is from Cropper (1993). The vegetation occurring on the site is classified according to the structural forms used by Specht (1981). The aim of the survey was to target any threatened flora species and identify any threatened ecological communities or populations as listed on the state or federal legislation.
This vegetation present on the site was assessed according to the following criteria;

- Species Present;,-
- History of disturbance including the stage of regeneration and the presence of exotics;,-
- Presence of significant plant species;,-
- Condition;, and
- Viability.

2.2.1 Taxonomy and References

Taxonomy is from Harden (1990 – 1993, 2000 and 2002) and from any recent updates from the Royal Botanic Gardens, Sydney. The main references utilised for flora background information in Table 1 and the Eight Part Tests of Significance include; NSW National Parks and Wildlife Service (1997), Robinson, L (1997), Fairley, A and Moore, P (1995), Threatened Species Profiles compiled by NSW NPWS and from field and research experience of the staff at Anderson Ecological Surveys Pty Ltd.

2.3 FLORA - RESULTS

2.3.1 *Vegetation Communities*

The survey detected one remnant native vegetation community. No threatened species were detected.

Disturbed Woodland to 22 metres in height.

The full list of flora species detected is provided in Appendix 1 of this report. No threatened species were detected during the survey. The whole of the study area is generally highly disturbed and generally contains negligible native vegetation in terms of a defined community. None of the vegetation within the study area is representative of any native vegetation community other than the vegetation contained in Piggot Reserve in the north eastern corner of the study site. The vegetation within Piggot Reserve has been mapped by NPWS (2000) as Shale Sandstone Transition Forest (High Sandstone Influence) Class A being greater than 10% crown cover and greater than 0.5 ha. The vegetation has been mapped by NPWS as other remnant vegetation and is not core habitat. This community represents a highly disturbed remnant. It appears to have been largely cleared approximately 20 years ago and is highly disturbed in terms of its structure and floristics. The overstorey is generally discontinuous in most areas, as is the shrub layer. Introduced weeds dominate the ground covers, although some native species still occur. The reserve is not fenced and as such there are large levels of domestic garden waste combined with other rubbish, which has been dumped. The viability of the reserve is likely to be quite low in the longer term, as it will gradually lose its viability and integrity through lack of management. Its condition at the current time is very poor due to its past and current disturbances, lack of management and the high levels of exotic weeds present. The high levels of exotic weeds present have established due to past disturbances and are most prevalent in areas, which are largely cleared of all native vegetation. Management and

restoration of this reserve is possible however would require considerable input over approximately 2-3 decades to restore it to a more representative community. The vegetation within the reserve is however highly degraded and no longer is representative of any Endangered Ecological Community.

2.3.2 Vegetation Analysis

The current condition of the reserve in terms of its floristics and structure indicates that it no longer conforms to a viable representation of any Endangered Ecological Community.

2.3.3 Potential Flora Species

The results of the 10km grid (centered on the study site) of the NSW NPWS Atlas of NSW Wildlife and the Environment Australia database detected *Cynanchum elegans* (E1), *Pterostylis saxicola*, (E1), *Gyrostemon thesioides* (E1), *Pimelea spicata* (E1), *Leucopogon exolasius* (V), *Acacia pubescens* (V), *Eucalyptus benthamii* (V) and *Melaleuca deanei* (V) within a 5km radius of the study site. None of these species were detected during this or the previous survey of the site and due to the high levels of degradation of potential habitat it is considered that the likelihood of any threatened species being present in the soil stored seed bank is negligible.

2.4 FLORA – CONSERVATION SIGNIFICANCE

2.4.1 Commonwealth Legislative Requirements

As there will be no impacts on any matters of national environmental significance no consideration is deemed required under the Commonwealth legislation. The vegetation within the reserve is a highly degraded it is no longer considered to be representative of Cumberland Plain Woodland. It has been highly degraded in both its structure and floristics and the degradation has been severe. There will therefore be no significant impact on any matter of environmental significance.

2.4.2 NSW Legislative Requirements

Under Section 5A of the Environmental Planning and Assessment Act 1979 an Eight Part Test is Required to determine "whether there is likely to be a significant effect on threatened species, populations or ecological communities, or their habitats" listed on Schedules 1 or 2 of the Threatened Species Conservation Act 1995, and consequently, whether a Species Impact Statement is required.

(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,
No individual flora species were detected despite targeted searches being undertaken. No viable local population was detected and as such none is likely to be placed at risk of extinction.

(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,
No Endangered Populations as listed on the TSC Act (1995) relate to this site.

(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 vegetation within the reserve has been so highly degraded that it no longer conforms to any Endangered Ecological community. As such the site is deemed to represent negligible potential habitat for any threatened flora species or endangered ecological community. No significant area of known habitat would be modified or removed.

(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,

No threatened community is deemed to be present due to the high levels of structural and floristic degradation. No threatened species were detected or are likely to occur. No endangered populations relate to this site. The vegetation on the site is quite isolated. No 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. No endangered ecological community is present on the subject site.

(e) whether critical habitat will be affected,
Under the TSC Act the Director-General prepares areas of critical habitat. No maps have been produced at the present time (NPWS Threatened Species Unit) which are relevant to the Proposal.

(f) whether a threatened species, population or ecological community, or their habitats, are adequately represented in conservation reserves (or similar protected areas) in the region,
No threatened species or endangered ecological community was detected. None are likely to occur due to the high levels of degradation to the site, which has included soil disturbance and compaction along with high levels of exotic weed infestation and rubbish dumping.

(g) whether the development or activity proposed is of a class of development or activity which is recognised as a threatening process,
The Final Determination of "Loss of biodiversity as a result of loss and/or degradation of habitat following clearing and fragmentation of native vegetation" as a Key Threatening Process under Schedule 3 of the TSC Act is relevant to this Proposal. There would however be negligible loss of biodiversity values due to the highly degraded nature of the remaining vegetation on the site.

(h) whether any threatened species, population or ecological community is at the limit of its known distribution,
No threatened species, which have potential to occur within the general local area, are at the limit of their known distributions.

2.5 FLORA - CONCLUSIONS

There was found to be no significant impact on any threatened species, their habitats, populations or endangered ecological communities as a result of the Proposal. As such a Species Impact Statement is not required. Referral to the Federal Minister for the Environment is not deemed to be required in relation to the obligations and objectives of the Commonwealth Environment Protection and Biodiversity Conservation Act 1999, as there would be no significant impact on any "Matters of National Environmental Significance".

3. FAUNA ASSESSMENT

3.1 FAUNA - INTRODUCTION

The survey of the area was carried out in order to document any potential habitat for threatened fauna on the site. The survey was carried out on the 7th of March 2003 with additional surveys carried out during February 2004. The weather conditions were fine with mild warm days during both survey periods.

3.2 FAUNA - METHODOLOGY

3.2.1 Field Surveys Methods

The methodology involved walking transects back and forth in a zigzag fashion across the site. The transects were approximately two metres apart.

Opportunistic Observations – Opportunistic observations of fauna species and potential habitat was made throughout the survey.

Habitat Analysis – Assessments of potential habitat for threatened species was undertaken. This included an assessment of the condition of this habitat.

Searches for Indirect Evidence of Fauna Species - This included searching for glider chews, scratches on Eucalypts, diggings, searches for owl pellets, owl whitewash, and identification of any specific habitat components for threatened fauna. Logs were turned over in search of reptiles then replaced in their original positions.

Targeted Surveys

Targeted surveys were undertaken for the Land Snail. This entailed turning over the pieces of rubbish, logs, rocks or other debris and searching in the leaf litter around the base of eucalypts.

3.2.2 Taxonomy and References

Taxonomy is from the following sources; Mammals (Strahan, 1995), Reptiles and Amphibians (Cogger, 1994), and Birds (Simpson and Day (1993). The main references utilised for the fauna background information in Table 2 and the Eight Part Tests of Significance include; Strahan, R (1995), Cogger, H (1994), Simpson and Day (1993), State Forests of NSW (1995), Robinson M (1995), Threatened Species Profiles compiled by NSW NPWS and from field and research experience of the authors.

3.3 FAUNA - RESULTS

3.3.1 Fauna Habitat

No threatened fauna was detected. There are generally negligible hollow trees present within the study area. One exception is a large dead eucalypt within Piggot Reserve, which could be utilised by arboreal mammals including microchiropteran bats. This tree however had no signs of usage by arboreal mammals as there were no scratches present. Likewise there were no signs of usage by owls as there was no whitewash or pellets present. The fauna habitat within Piggot Reserve is of a low quality and there is negligible fallen timber, no rocky outcrops or other special habitat features such as free water, streams or dams. Targeted searches for the Land Snail were undertaken and none were located. The site conforms to potential Koala habitat as per SEPP 44 however no signs of Koalas were located in the form of scratches on trees or scats. This species is generally considered absent from this local area.

3.3.2 Fauna Analysis

There is negligible fauna habitat value within the reserve. The only species which has any potential

to use such a habitat is the Cumberland Plain Land snail and none were detected. As such it is unlikely that this species would utilise this reserve as there is only poor quality sheltering habitat present and if they have been utilising a site there are often empty shells present, which indicates signs of usage. The large dead eucalypt within the reserve would have to be removed due to safety reasons and even if there were some usage of this eucalypt by microchiropteran bats it is recommended that the removal of this tree be compensated by the erection of 10 artificial roost sites. As microchiropteran bats often change roosting and breeding sites to avoid predation by species such as owls, nightjars, and snakes the removal of one potential roost would not constitute a significant impact on any threatened microchiropteran bat species.

3.3.3 Potential Fauna Species

The results of the 10km grid search (centered on the study site) of the NSW NPWS Atlas of NSW Wildlife and the Environment Australia database detected the Cumberland Plain Land Snail (E1), Giant Burrowing Frog (V), Red-crowned Toadlet (V), Powerful Owl (V), Koala (V), Yellow-bellied Sheath-tailed Bat (v), Eastern Falistrelle (V), and Large-footed Myotis (V). As discussed in the fauna analysis section of the report there is generally negligible potential habitat for any threatened fauna species within the reserve.

3.4 FAUNA – CONSERVATION SIGNIFICANCE

3.4.1 Commonwealth Legislative Requirements

No fauna species or endangered fauna populations listed under the *Environment Protection and Biodiversity Conservation Act 1999* were detected. None are expected to occur due to the lack of potential habitat present. The removal of the degraded habitat on the site would not cause any native species or population to become Critically Endangered, Endangered or Vulnerable or increase the risk to any native species such that it may have its conservation status increased. There are no issues of National Conservation significance in relation to threatened fauna that would require referral to the Federal Minister for the Environment for consideration or approval in accordance with the Environment Protection and Biodiversity Conservation Act (1999).

3.4.2 NSW Legislative Requirements

Under Section 5A of the Environmental Planning and Assessment Act 1979 an Eight Part Test is Required to determine "whether there is likely to be a significant effect on threatened species, populations or ecological communities, or their habitats" listed on Schedules 1 or 2 of the Threatened Species Conservation Act 1995, and consequently, whether a Species Impact Statement is required.

As discussed earlier no threatened species are likely to be impacted by the proposed development. Even though there is deemed to be no significant habitat for any threatened fauna species to be impacted an eight-part test is provided below. This is in accordance with the guidelines provided in *Information Circular 2 from NSW NPWS (Threatened Species Assessment under the EP&A Act : The "8 Part Test" of Significance)*. The guidelines state (page 8*) " If no threatened species, populations or ecological communities, or their habitats have been recorded within the study area, and it is unlikely that such species, populations or ecological communities, or their habitats will occur, the "8 Part Test" must be applied and a conclusion must be made that no significant effect is likely due to the absence of threatened species, populations or ecological communities, or their habitats"*.

(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,
There will be no significant impacts on any threatened species. No threatened species were detected or are likely to occur. The lifecycle of no threatened species would be disrupted such that any viable local population is likely to be placed at risk of extinction. The removal of the dead tree will remove potential hollows for microchiropteran bats however the replacement of this potential habitat with

approximately 10 artificial roosts within the local area will adequately compensate for this loss. This tree however would have to be removed due to the high levels of structural defects it has as it would be a safety concern. The removal of one potential roost tree would not however result in a significant impact on any threatened microchiropteran bat species.

(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,
No endangered population was found to be present.

(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.
No significant area of known habitat is to be modified or removed for any threatened species. Due to the negligible potential habitat for any threatened species on the site no significant area of known habitat would be modified or removed. The removal of one potential roost for microchiropteran bats would not constitute the removal of a significant area of known habitat.

(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,
No area of habitat would be isolated from currently interconnecting or proximate areas of habitat. No threatened fauna species were detected or are likely to rely on the reserve as critical habitat for their survival. The reserve is relatively isolated in terms of connectivity to other bushland particularly for the less mobile fauna such as invertebrates.

(e) whether critical habitat will be affected,
Under the TSC Act the Director-General prepares areas of critical habitat. No maps have been produced at the present time which relate to this site.

(f) whether a threatened species, population or ecological community, or their habitats, are adequately represented in conservation reserves (or similar protected areas) in the region,
No threatened species were detected or are likely to be impacted. There is no formal data currently available on the adequateness of the conservation representation of habitat for threatened fauna species within the region.

(g) whether the development or activity proposed is of a class of development or activity which is recognised as a threatening process,
The Final Determination of "Loss of biodiversity as a result of loss and/or degradation of habitat following clearing and fragmentation of native vegetation" as a Key Threatening Process under Schedule 3 of the TSC Act is relevant to this proposal. There would however be negligible loss of biodiversity values due to the degraded nature of the remaining habitat on the subject area.

(h) whether any threatened species, population or ecological community is at the limit `of its known distribution,
No threatened species with potential to occur in the local area are at the limit of their known distribution.

3.5 FAUNA - CONCLUSIONS

There was found to be no significant impact on any threatened species, habitats or populations. As such a Species Impact Statement is not required. No referral to the Federal Minister for the Environment for consideration or approval in accordance with the *Environment Protection and Biodiversity Conservation Act (1999)* is required.

4. CONCLUSIONS

As there will be no impacts on any threatened species, communities or their habitats as listed on the Schedules of the *NSW Threatened Species Conservation Act (1995)* or the *Environment Protection and Biodiversity Conservation Act (1999)* there are no limitations to the Proposal. No Species Impact Statement is required.

5. RECOMMENDATIONS

The following recommendations will assist in reducing any potential impacts on the surrounding environment. There will however be negligible impact from the proposal and as such there are no formal specific amelioration measures that are required. The following however should be implemented.

- Standard sediment control devices should be utilised.
- The works should aim to retain as much of the existing native vegetation as possible.
- Landscaping should utilise native endemic species as far as possible.

6. REFERENCES

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7. APPENDIX 1- FLORA SPECIES RECORDED – MINTO AREA

SPECIES	
Acacia falcata	
Acacia parramattensis	
Ageratina adenophora *	
Andropogon virginicus *	
Araujia hortorum *	
Axonopus affinis *	
Axonopus compressus *	
Bidens pilosa *	
Brizia maxima *	
Bursaria spinosa	
Casuarina cunninghamiana	
Chloris virgata *	
Cyperus rotundus *	
Entolasia marginata	
Eucalyptus amplifolia ssp amplifolia	
Eucalyptus crebra	
Eucalyptus moluccana	
Eucalyptus parramattensis ssp. parramattensis	
Eucalyptus tereticornis	
Imperata cylindrica	
Juncus cognatus *	
Lantana camara	
Ligustrum lucidum *	
Opuntia vulgaris *	
Paspalum dilatatum *	
Pennisetum clandestinum *	
*Plantago lanceolata**	
Prostanthera scutellarioides	
Protasparagus aethiopicus *	
Pteridium esculentum *	
Rhynchelytrum repens *	
Robinia pseudoacacia *	
Rubus fruticosus *	
Salix babylonica *	
Senecio madagascariensis *	
Setaria verticillata *	
Sida rhombifolia *	
Themeda australis	
Trifolium repens *	
Typha orientalis *	
Verbena bonariensis *	

* indicates exotic species

8. APPENDIX 2 – FAUNA SPECIES RECORDED

Dacelo novaeguineae	Laughing Kookaburra
Gymnorhina tibicen	Australian Magpie
Lampropholis guichenoti	Garden Skink
Manorina melanocephala	Noisy Minor
Oryctolagus cuniculus *	Rabbit
Rhipidura leucophrys	Willie Wagtail
Strepera graculina	Pied Currawong
Streptopelia chinensis	Spotted Turtle-dove

* indicates exotic species

9. APPENDIX 3 – MAPPING