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TORO ENERGY
LAKE MAITLAND
PEER REVIEW – FLORA AND VEGETATION

A Resource Development Group Company

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TORO ENERGY

LAKE MAITLAND

PEER REVIEW – FLORA AND VEGETATION

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EXECUTIVE SUMMARY

Toro Energy Limited (Toro) acquired the Lake Maitland uranium deposit from Mega Uranium in August 2013 and plans to seek environmental approval for the mining of this deposit as well as the Millipede deposit. Toro have sought the advice and recommendations of *ecologia* Environment to undertake a peer review of the flora and vegetation reports previously completed.

Several flora and vegetation assessments have taken place at Lake Maitland; *Lake Maitland Baseline Flora and Vegetation Surveys – May and November 2007 and May 2009* (Outback Ecology 2009) and *Level 1 Vegetation and Flora Survey – Borefield, Accommodation Camp and Access Route* (Outback Ecology 2011). The assessments completed thus far (Table 2.1) have consisted of three phases of a Level 2 assessment at Lake Maitland and a Level 1 assessment at the proposed borefield, accommodation camp and access route.

The scope and objectives of each survey were sufficient for a flora and vegetation assessment for the purposes of environmental impact assessment, and were generally well met. The results are considered generally accurate and with minimal review, are considered to remain relevant.

- Four key gaps were identified, however all of these are being addressed by *ecologia* during supplementary flora and vegetation surveys being completed in November 2014 and January 2015:
    - The identification of *Maireana prosthecochaeta* (P3) needs to be confirmed and if present, the population size and distribution in the area is required to be determined;
    - Vegetation units currently described from a single quadrat need further survey to have at least two representatives;
    - Some of the field surveys were not conducted during optimal timing based on season and preceding rainfall levels; and
    - A review survey in the Fire Regeneration Eucalypt vegetation community is appropriate.
- Assuming the supplementary surveys currently being undertaken by *ecologia* are successful, obtaining reproductive material for cryptic species and the suspected *Maireana prosthecochaeta* (P3), sufficient data should be available to accurately assess the proposed impacts of the project.

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1 INTRODUCTION

Toro Energy Limited (Toro) acquired the Lake Maitland uranium deposit from Mega Uranium in August 2013 and plans to seek environmental approval for the mining of this deposit as well as the Millipede deposit. Toro plans to process ore from Centipede and another deposit at Lake Way along with ore from Millipede and Lake Maitland at one central processing plant located adjacent to the Centipede deposit. Toro intends to refer the Millipede and Lake Maitland deposits to the Environmental Protection Authority (EPA) for assessment, which will require detailed surveys and studies across all proposed disturbance areas.

Mega Uranium undertook and completed environmental assessments and surveys across the Lake Maitland project sufficient to allow the proposal to be assessed under an Environmental Review and Management Programme (ERMP) (equivalent to the current Public Environmental Review (PER) level) in 2009.

Initial discussions between the Office of the EPA (OEPA) and Toro indicate that the existing environmental assessments and surveys for Lake Maitland would be acceptable for submission in a PER, following peer review for correctness of content and adequacy. Toro have therefore sought the advice and recommendations of *ecologia* Environment (*ecologia*) and appropriate sub-consultants who were commissioned to undertake a peer review of the following reports:

- Regional and local flora;
- Terrestrial fauna;
- Short Range Endemic invertebrates (SREs);
- Stygofauna;
- Troglofauna;
- Aquatic ecology;
- Sediments and erosion;
- Soils and waste rock characterisation and geochemical assessment;
- Human health and ecological risk assessment (human and non-human biota); and
- Air quality impact assessment and monitoring.

This peer review report pertains to the *Lake Maitland Baseline Flora and Vegetation Surveys – May and November 2007 and May 2009* (Outback Ecology 2009) and *Level 1 Vegetation and Flora Survey – Borefield, Accommodation Camp and Access Route* (Outback Ecology 2011) reports which were completed by Chad Hughes, K Moiler and others and reviewed by Nicola Burne, Julia Lawson and D Jasper.

The peer review has been completed by Botany Team Leader, Dr. Renee Young of *ecologia* Environment.

1.1 LEGISLATION AND POLICY BACKGROUND OF PEER REVIEW

1.1.1 Compliance

This peer review is in reference to the completed surveys and reports meeting the requirements of all statutory legislation, guidance and policy relevant to regional and local flora, including but not limited to:

- EPA Guidance Statement No. 51, Terrestrial Flora and Vegetation Surveys for Environmental Impact Assessment in Western Australia (EPA 2004);
- EPA Position Statement No. 2, Environmental Protection of Native Vegetation in Western Australia: Clearing of Native Vegetation with Particular Reference to Agricultural Areas (EPA 2000); and
- EPA Position Statement No. 3, Terrestrial Biological Surveys as an Element of Biodiversity Protection (EPA 2002).

1.1.2 Approach

A review was undertaken of all environmental reports pertaining to the acquired Lake Maitland Project for breadth of scope, technical methodology, correctness of content and adequacy. The findings of the peer review aim to determine:

a) Correctness of findings and conclusions of the reports;
b) Adequacy of scope, methodology and results of the reports;
c) Compliance of the reports with statutory legislation and policy; and
d) Recommendations to address gaps, if applicable.

2 REVIEW RESULTS

The flora and vegetation assessment of Lake Maitland consists of two separate assessments, both completed by Outback Ecology Services (Outback Ecology). The details of assessments and documents reviewed in this literature review are shown in Table 2.1.

Table 2.1 – Summary of survey types and timing

Report	Survey types	Number of personnel	Survey dates
Lake Maitland Baseline Vegetation and Flora Surveys (Outback Ecology 2009)	Desktop assessment	N/A	N/A
	Level 2 vegetation and flora survey	3	7-13 May 2007
		2	1-3 November 2007
		3	4-16 May 2009
Lake Maitland Level 1 Vegetation and Flora Survey - Borefield, Accommodation Camp and Access Route (Outback Ecology 2011)	Desktop assessment	N/A	N/A
	Level 1 field survey and habitat assessment	2	29 July – 5 August 2010

2.1 CORRECTNESS OF FINDINGS AND CONCLUSIONS

The major findings of the reports are for the most part considered to be correct. A summary of the key findings is provided below:

Lake Maitland Baseline Vegetation and Flora Surveys, May and November 2007 and May 2009

- Desktop searches identified no Threatened Flora to occur within 115 km of the study area. However, at the time of survey 25 Priority Flora were identified to occur in the search area including *Apatophyllum macgillivrayi* (P1); *Baeckea* sp. Sandstone (P1); *Eremophila congesta* (P1); *Eremophila flaccida* subsp. *attenuata* (P1); *Eremophila gracillima* (P1); *Eucalyptus striaticalyx* subsp. *delicata* (P1); *Euryomyrtus inflata* (P1); *Micromyrtus chrysodema* (P1); *Ptilotus astrolasius* var. *luteolus* (P1); *Stenanthemum mediale* (P1); *Thryptomene* sp. Leinster (P1); *Gonocarpus ephemerus* (P2); *Baeckea* sp. Melita Station (P3); *Calytrix erosipetala* (P3); *Calytrix uncinata* (P3); *Eremophila gracillima* (P3); *Gunniopsis propinqua* (P3); *Tecticornia cymbiformis* (P3); *Mimulus repens* (P3); *Olearia mucronata* (P3); *Stackhousia clementii* (P3); *Acacia balsamea* (P4); *Eremophila pungens* (P4); *Grevillea inconspicua* (P4); and *Hemigenia exilis* (P4). Several of these species have since undergone a revision in conservation status, however all changes have been a downgrade or delisting. A summary of these changes is provided in Section 2.3.
- Ninety-one quadrats (30 x 30 m) were surveyed over the three phases. Vegetation was described using the Muir scale (Muir 1977). Vegetation condition was assessed using the Keighery scale (Keighery 1994). Targeted searches for conservation significant taxa were completed in suitable habitat.
- A total of 244 taxa from 36 families and 78 genera were recorded across the Lake Maitland Project. The flora was found to be dominated by the family Chenopodiaceae, with 48 taxa recorded. Other dominant families included Mimosaceae (28 taxa), Myoporaceae (27 taxa) and Poaceae (18 taxa).
- No Declared Rare Flora (DRF) species have been positively identified as occurring in the Lake Maitland Project area. One specimen collected during the November 2007 survey was initially identified as the DRF species *Eremophila rostrata.* A successive flora survey in May 2009 enabled this species to be identified as *Eremophila latrobei* subsp. *latrobei,* a non-conservation significant species.

- One potential Priority 3 flora species, *Maireana prosthecochaeta,* was recorded at one location during the May 2009 survey. The identification of this species has not been confirmed and the size of the population is unknown at this stage.
- Two weed species: *Portulaca oleracea* and *Tribulus terrestris,* were also recorded during the May 2009 survey. These two species are not listed as declared plants under the *Agriculture and Related Resources Protection Act, 1976*. Since the publication of the Outback Ecology 2009 report, *Portulaca oleracea* has been delisted and is no longer regarded to be an Environmental Weed.
- A total of 31 vegetation communities were described and mapped across the Lake Maitland Project. These were grouped into four vegetation associations: Salt Lake (playa) vegetation; Kopi Ridge vegetation; Calcrete vegetation and Plains vegetation.
- The Kopi Ridge Vegetation association was initially observed to be of limited extent within the Lake Maitland Project, a subsequent flora and vegetation survey undertaken in May 2009 established the presence of this association outside the Lake Maitland Project. No Priority Ecological Communities or Threatened Ecological Communities occur in the Lake Maitland Project area. No vegetation communities deemed to be 'At Risk' by the Department of Environment and Conservation (DEC) occur in the Lake Maitland Project.

Lake Maitland Level 1 Vegetation and Flora Survey - Borefield, Accommodation Camp and Access Route, July-August 2010

- Desktop searches including database searches and results of previous surveys show that no Threatened Ecological Communities or Priority Ecological Communities occur within 100 km of the study area. No Threatened flora were identified to occur within search area although ten Priority taxa were identified. These include one fungus *Parmeliopsis macrospora* (P3) and nine flora taxa: *Anacampseros* sp. Eremaean (F. Hort, J. Hort & J. Shanks 3248) (P1); *Calytrix erosipetala* (P3)*; Calytrix uncinata* (P3)*; Cratystylis centralis* (P3)*; Eremophila gracillima* (P3)*; Frankenia georgei* (P3); *Baeckea* sp. Melita Station (P4); *Eremophila pungens* (P4) and *Grevillea inconspicua* (P4). Several of these species have since undergone a revision in conservation status, however all changes have been a downgrade or delisting. A summary of these changes is provided in Section 2.3.
- During the August 2010 survey, a total of 68 relevé sites were assessed across the survey area. Vegetation was described using the Muir scale (Muir 1977). Vegetation condition was assessed using the Keighery scale (Keighery 1994).
- A total of 138 taxa (including subspecies and variants) from 30 families and 66 genera were recorded across the Survey area. The flora was dominated by the family Mimosaceae, with 21 taxa recorded. Other dominant families included Chenopodiaceae (18 taxa), Myoporaceae (14 taxa) and Poaceae (10 taxa). No Declared Rare Flora (DRF) species were recorded during the field survey. One Priority flora, *Cratystylis centralis* was recorded during the surveys in the vicinity of the proposed site access route.
- One weed species: *Portulaca oleracea* was recorded during the May 2009 survey. Since the publication of the Outback Ecology 2010 report, *Portulaca oleracea* has been delisted and is no longer regarded to be an Environmental Weed.
- A total of 34 vegetation units were described and delineated across the Survey area, these were grouped into 11 broad vegetation associations.
- The condition of vegetation across the Survey area was found to range from 'excellent to 'degraded'. The condition of the vegetation has been impacted by four main disturbances; grazing activities of cattle, kangaroos and rabbits; fire; vehicle access; and exploration

activities. The predominant adverse impacts across the Survey area are grazing by feral animals and fire (on affected sandplains and *Acacia* woodland). Adverse impacts from vehicle access and mining related disturbances are restricted to the direct footprint and are not considered to be significant in comparison to fire and grazing pressures.

- No Priority Ecological Communities or Threatened Ecological Communities were encountered, however calcrete platform vegetation is deemed 'At Risk' in the Goldfields (Cowan 2001), due to various threatening processes such as grazing pressure from feral animals and potential mining activities. While this 'At Risk' classification does not afford it any protection, attempts to minimise adverse impacts on these areas are recommended by Outback Ecology.
- Approximately 400 ha of calcrete vegetation was included in the survey, consisting of the sites for the Accommodation Camp, Site Access Route and the southern portion of the access to the Borefield. The disturbance within these areas is thought to be substantially less than the area surveyed and would be a small proportion of the total area of the calcrete vegetation type.

2.2 ADEQUACY OF SURVEY

2.2.1 Scope of Works

A total of four separate surveys, consisting of various levels of surveying have been completed (Table 2.1).

The overall objectives of the flora and vegetation assessments for the Lake Maitland Project were to:

a) Undertake a review of conservation significant flora species (Priority Flora and DRF), Priority Ecological Communities (PECs) and Threatened Ecological Communities (TECs) located, or likely to occur within the Lake Maitland Project.
b) Develop an inventory of conservation significant flora (including data collated from detailed quadrat-based field surveys).
c) Define, describe and map vegetation associations across the Lake Maitland Project.
d) Provide an initial assessment of the regional and local conservation value of the flora and vegetation.
e) Provide quantitative data to establish a baseline against which future impacts and rehabilitation can be assessed.

The objectives of the scope are considered to have been met. However, some additional follow-up survey effort is considered to be required due to the potential for conservation significant flora to occur.

2.2.2 Methodology

2.2.2.1 Desktop Assessments

Two separate desktop assessments have been completed for the Lake Maitland study area. These desktop assessments reviewed a total of six databases and five previous flora and vegetation surveys in the surrounding region.

The desktop assessment is comprehensive, meets the relevant guidance and is likely to have identified all potential species occurring in the study area and significant vegetation in the region.

2.2.2.2 Field assessments

The four field surveys (Table 2.1) have consisted of three Level 2 and one Level 1 Flora and Vegetation assessments. The assessments were largely conducted in accordance with relevant guidelines and are of satisfactory adequacy.

Adequacy of Resources

The personnel involved in the field surveys all have a Bachelor of Science or similar. Taxonomic identifications were completed by personnel also with Bachelors of Science and specialist identifications undertaken by Bindy Datson a specialist in salt lake ecology from Actis Environmental Consulting. Personnel undertaking the field assessments and identifications have appropriate qualifications although the level of experience in conducting field surveys to support EIA is not included in the report. It appears that there was little overlap between the staff undertaking the field assessment and those writing the report which can result in a lack of cohesion if a detailed handover was not undertaken.

Level of Survey

The scale and nature of proposed impact at Lake Maitland, and the bioregional location of the study area dictate a two phase (multi season) Level 2 survey is required, in this regard, the Level 2 survey is compliant with relevant guidelines (EPA 2000, 2002, 2004). The Level 1 survey assessing the borefield, accommodation camp and access route was deemed appropriate given the low level of impact in these areas, the high intensity of relevés assessed and the previous Level 2 assessments completed in the area.

Field Survey Timing

It is recommended by Guidance 51 (EPA, 2004) to conduct flora and vegetation surveys within peak flowering periods and allow four to six weeks following a peak rainfall event and warm temperature to allow for germination of annuals and ephemerals and proliferation of flowering of the majority of perennial species.

The Level 2 surveys were conducted in Autumn and Spring; however, both years (2007 and 2009) experienced lower than average rainfall. The two surveys conducted in 2007 (May and November) were conducted subsequent to a number of months of receiving a low rainfall; this would have been a contributing factor towards the low species numbers recorded. The low rainfall in 2007 resulted in what can be considered a floristically poor season. The follow-up survey in May 2009 was conducted following a peak rainfall event; however, the previous couple of months recorded slightly lower than average rainfall.

Rainfall received in the three months prior to the November 2010 Level 1 survey of the borefields, accommodation camp and access route was average.

Level 2 Survey Methodology

The Level 2 survey was completed in accordance with Guidance Statement No. 51, undertaking the survey through the use of quadrats. Quadrat size, however, throughout all surveys were 30 x 30 m, not the 20 x 20 m recommended for the Murchison bioregion. A total of 91 quadrats were surveyed over 7,327 ha by Outback Ecology within the tenements and regionally, confirming the presence of all vegetation units outside the study area, although impacts have not been quantified. A table summarising the vegetation units along with key indicator species, areas covered, landform, condition and species richness is not included in the report, although components of this information is scattered throughout the appendices. Four vegetation units were described from a single quadrat and further sampling in these units will be required.

The Recommended Interim Protocol for flora surveys on Banded Ironstone Formations (BIF) (DEC 2005), states that '*…20 x 20 m quadrats have been used in the Eastern Goldfield Ranges. This requirement will need to be assessed as surveys move into more arid zones, where 30 x 30 m quadrats*

are more appropriate.' Whilst the area surveyed is not on BIF, the study area lies north of the Eastern Goldfields and is comprised of sparse vegetation. Thus the 30 x 30 m quadrats applied may be considered appropriate given the location of the study area.

Habitats that had the potential to support species of conservation significance were also searched. Transects of approximately 150 m in length at 20 m intervals were traversed and searched and additional opportunistic searching was also carried out on transit to quadrats located within the proposed mining footprint.

The targeted searches in suitable habitat appear to be minimal and restricted to a single vegetation unit. The level of searching undertaken is difficult to assess from Figure 7 (inappropriate scale) and the proposed impact areas are not presented on the figure, thus the level of survey completed in the impact areas and regionally are difficult to assess.

Level 1 Survey Methodology

The borefields, accommodation camp and access route at Lake Maitland were surveyed through the installation of 68 relevés. At each relevè a number of parameters were recorded including location, representative photograph, habitat type, vegetation condition, vegetation description, species present, topographic position, slope and aspect, soil type, rock type, time since fire and level of disturbance.

Opportunistic collections of suspected conservation significant species and weeds were also recorded during the survey.

The level of survey completed in the borefields, accommodation camp and access route is considered adequate for a Level 1 assessment

2.2.2.3 Vegetation mapping

The vegetation of the Lake Maitland area was analysed using presence-absence quadrat data in Primer 6. A hierarchical classification was used to determine the floristic communities, with communities defined based off the subsequent dendrogram and aerial photography.

Vegetation mapping of the borefield, accommodation camp and access route was based off aerial photography and field descriptions from the relevés.

The vegetation mapping appears comprehensive and is likely to have recorded all vegetation communities present. The vegetation units are appropriately delineated and defined, and mapped at an appropriate scale for EIA, although more detailed mapping of the fringing salt lake vegetation may be warranted. Also, the area of occupancy of each vegetation community within the study area and in the context of the proposed footprint is not calculated and will need to be captured in other supporting documentation prior to submission.

2.2.3 Results

2.2.3.1 Conservation significant flora

The Level 2 Lake Maitland Baseline flora and vegetation surveys (Outback Ecology 2009) included a desktop assessment which revealed a total of 25 species of conservation significance (11 Priority 1, one Priority 2, nine Priority 3 and four Priority 4 species) as potentially occurring in the study area.

The Desktop assessment of the borefields, accommodation camp and access track (Outback Ecology 2011) revealed nine Priority species as potentially occurring in the study area (one Priority 1, five Priority 3 and three Priority 4) of which five were new additions to the previous searches.

No DRF species have been positively identified as occurring in the Lake Maitland Project areas based on desktop information gathered from field surveys. One specimen collected during the November 2007 survey was initially identified as the DRF species *Eremophila rostrata.* A successive flora survey

in May 2009 enabled this species to be identified as *Eremophila latrobei* subsp. *latrobei,* a non-conservation significant species.

During the Level 2 Lake Maitland Baseline flora and vegetation surveys, one potential Priority 3 flora species, *Maireana prosthecochaeta,* was recorded at one location in the May 2009 survey. The identification of this specimen has not been confirmed and the size of the population is unknown at this stage.

During the Level 1 survey of the borefields, accommodation camp and access route, one Priority 3 species, *Cratystylis centralis,* was recorded. This species was located in sections of the proposed access route and in this location was recorded to be very common with reported conservative estimates over 10,000 individuals within the areas of calcrete soils. The proposed infrastructure layout (in 2009) avoided the highest densities of this population and Outback Ecology suggests impacts to the population would be minimal. An impact assessment has not been presented within the report and will need to be captured in other supporting documentation of the submission.

2.2.3.2 Conservation significant vegetation

No TECs nor PECs were recorded or are known to occur within the project area.

The Kopi Ridge vegetation was the most restricted vegetation association identified in the Level 2 assessment however this vegetation unit was also found to occur outside the project area, with the extent within the Lake Maitland Project area described by Outback Ecology (2009) as small. However, calculated areas of this vegetation unit inside and outside the project area are not included in the report and therefore the proportion of impact has not, as yet, been quantified.

Vegetation of the borefields, accommodation camp and access corridor was divided into 11 broad vegetation formations which were then further divided into 34 vegetation communities. Of these, the vegetation units comprising 'Calcrete platform vegetation' is potentially 'At Risk' in the Goldfields, due to various threatening processes such as feral animals and grazing pressure, and potentially from mining activities (Cowan 2001; NLWRA 2002). Approximately 400 ha of calcrete vegetation was mapped as a part of the survey of the accommodation camp, access route and the southern portion of the access to the borefield. The eventual disturbance within these surveyed areas will be substantially less and is a small fraction of the total area of the calcrete vegetation type (in excess of 20 km^2); therefore it is unlikely that these disturbances will have a significant impact on this habitat.

Groundwater dependent ecosystems

Vegetation communities 2 and 3 within the Level 2 survey of the Lake Maitland Project area were identified to be Groundwater Dependent Ecosystems (GDEs), occurring within 1 km of the impact areas. Potential impacts to this vegetation could not be assessed at the time of the report production with further detail of proposed drawdown required to assess potential impact.

2.3 CURRENCY OF RESULTS

There have been no changes to the available Guidance or Position statements (EPA 2000, 2002, 2004) since the completion of the flora and vegetation assessments undertaken by Outback Ecology at Lake Maitland in 2007 and 2009. The approach is therefore still current in the context of the existing guidance. A draft revision of Guidance Statement No. 51 has been developed by DPaW, however this is still pending finalisation and not publically available.

Due to the time that has passed since the completion of the surveys, a number of taxonomic revisions have occurred for various flora taxa. These are as follows:

Level 2 Lake Maitland assessment:

- *Acacia balsamea* was P4, now no longer listed;

- *Baeckea* sp. Melita Station was P3, now no longer listed;
- *Baeckea* sp. Sandstone, was P1, now P3;
- *Calytrix erosipetala* was P3, now no longer listed;
- *Eremophila flaccida* subsp. *attenuata* was P1, now P3;
- *Euryomyrtus inflata* was P1, now P3;
- *Mimulus repens*, was P3, now no longer listed;
- *Ptilotus astrolasius* var. *luteolus* was (P1) now *Ptilotus astrolasius* and no longer listed; and
- *Thryptomene* sp. Leinster was P1, now P3.

Level 1 Borefield, accommodation camp and access route

- *Baeckea* sp. Melita Station was P3, now no longer listed;
- *Calytrix erosipetala* was P3, now no longer listed; and
- *Frankenia georgei* was P3, now no longer listed.

DEC typically considers biological survey results in most bioregions current for up to five years, due to taxonomic revisions and updates to lists and mapping of species and communities or conservation significance. Given that the 2007 and 2009 assessments are now seven and five years old, respectively, they may be considered 'out of date' and require revisiting in the field. However, often desktop reviews such as included in this report are considered adequate. Specific advice from DEC is advised.

2.4 COMPLIANCE

Assessments of the study area meet statutory legislation. The field assessments meet the current relevant guidelines and position statements.

2.5 GAP ANALYSIS AND RECOMMENDATIONS

A summary of the identified gaps and recommendations to fill those gaps is provided below:

- GAP 1: One potential conservation significant flora species, *Maireana prosthecochaeta* (P3), was potentially recorded during the second phase of the Level 2 survey during May 2009. A positive identification could not be confirmed and additional material containing flowering material is required.
    - RECOMMENDATION 1: *ecologia* is undertaking additional surveys in November 2014 and January 2015 in attempt to confirm the presence of this species and determine the population distribution and size.
- GAP 2: A proportion of the vegetation mapping was carried out using interpretation of aerial imagery and some communities are represented by only a single quadrat.
    - RECOMMENDATION 2: Further survey work is required to ground truth the interpreted communities and ensure that all of the vegetation communities are represented by a minimum of two quadrats.
- GAP 3: Some of the field assessments were not carried out during optimal flowering times and/or were conducted following periods of unseasonally low rainfall.
    - RECOMMENDATION 3: *ecologia* has undertaken additional survey work targeting vegetation that is currently based on data from a single quadrat. This survey has been completed in November, however occurred approximately four weeks

following 80 mm of rainfall which was received at Lake Maitland in October 2014. Therefore, this survey will have been undertaken during the recommended time of four to six weeks following a period of high rainfall.

- GAP 4: There is the potential that restricted emergent species may now occur within the Fire Regeneration Eucalypt vegetation community, which were not previously recorded This area also has the potential to now support vegetation of a different condition than what was recorded during the intial surveys.
    - RECOMMENDATION 4: *ecologia* is resampling the Fire Regeneration Eucalypt vegetation community in November 2014, in order to verify the current species composition, structure and condition.

3 CONCLUSIONS

The key conclusions of the peer review are as follows:

- The scope and objectives of each survey were generally well met and the surveys meet requirements of the relevant guidance statements;
- Four key gaps were identified, however all of these are being addressed by *ecologia* during supplementary flora and vegetation surveys being completed in November 2014 and January 2015:
    - The identification of *Maireana prosthecochaeta* (P3) needs to be confirmed and if present, the population size and distribution in the area is required to be determined;
    - Vegetation units currently described from a single quadrat need further survey to have at least two representatives;
    - Some of the field surveys were not conducted during optimal timing based on season and preceding rainfall levels; and
    - A review survey in the Fire Regeneration Eucalypt vegetation community is appropriate.
- The flora and vegetation assessment of the Lake Maitland Project Area and associated borefields, accommodation camp and access route is current and correct in accordance with EPA guidance and position statements and the surveys have been carried out in accordance with the guidelines.
- Assuming the supplementary surveys currently being undertaken by *ecologia* collect suitable material to taxonomically identify the suspected *Maireana prosthecochaeta* (P3), sufficient data should be available to accurately assess the proposed impacts of the project.

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