Flinders Shire Council

15 Mile Irrigation Project

EPBC Significant Impact Assessment

July 2019

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1. Introduction

1.1 Background

The 15 Mile Irrigation Project area (Lot 168 on SP262319, 918ha) was originally part of the Queensland State Stock Route Reserve and was acquired by Flinders Shire Council in 2016 for the purposes of developing agricultural development blocks for private investment. Since the acquisition Council have committed to a number of technical studies to support obtaining major development approvals and associated water licences for this project. The Project has been declared a 'coordinated project requiring an impact assessment report' by the Coordinator-General under Part 4, section 26(1)(b) of the *State Development and Public Works Organisation Act 1971* (SDPWO Act) on 24 August 2018.

Among the technical studies undertaken in support of this Project has been a flora and fauna survey (Wild Environmental 2018) which identified habitat potentially supporting the Commonwealth listed *Acacia crombiei* (pink gidgee) and the Julia Creek dunnart (*Sminthopsis douglasi*). Both are listed as 'vulnerable' under the provisions of the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). However, neither species has been confirmed as being present within the Project area. As part of their Due Diligence for the approval process, Flinders Shire Council have commissioned GHD to assess the significance of the potential impact of the 15 Mile Irrigation Project on pink gidgee and the Julia Creek dunnart.

1.2 Purpose of this report

1.2.1 Julia Creek dunnart

The Julia Creek dunnart (*Sminthopsis douglasi*) is a small carnivorous marsupial listed as 'endangered in Queensland under Schedule 2, part 1 of the *Nature Conservation (Wildlife) Regulation* 2006 and 'vulnerable' nationally (EPBC Act). In Queensland the species is ranked as a critical priority under the Queensland government's Back on Track species prioritisation framework, and nationally the species is subject to a Recovery Plan[1]. The 15 Mile Irrigation Project Area has been identified as potentially including vegetation and landform communities that may provide important habitat for this species (Wild Environmental 2018).

Subsequently, a component of the purpose of this report is to provide an assessment of the Julia Creek dunnart (*Sminthopsis douglasi*) against the criteria identified in the *Matters of National Environmental Significance – Significant Impact Guidelines 1.1* (the Guidelines).

1.2.2 Pink Gidgee

Pink gidgee (*Acacia crombiei*) is a range and habitat restricted species with a wide, but disjunct population in north-western Queensland. Pink gidgee records are known from 11 mapped vegetation communities (Regional Ecosystems - RE) which provide supporting habitat, of which two, RE 4.3.23 and RE 4.3.14 have been mapped within parts of the 15 Mile Irrigation area as components of larger RE mosaics.

There are no corresponding Commonwealth Significant Impact Guidelines applicable to the assessment of pink gidgee, however this report assesses available information on the habitat factors that are known to support this species, cross referenced with the results of the field

[1] http://www.environment.gov.au/biodiversity/threatened/publications/recovery/juliacreek-dunnart

surveys undertaken by Wild Environmental (2018) to make a determination of the likely impact of the 15 Mile Project on pink gidgee.

This report identifies the significance of the impacts of the proposed 15 Mile Irrigation Project on the Julia Creek dunnart and pink gidgee, and makes a recommendation as to whether a referral under the provisions of the EPBC Act is required.

1.3 Scope and caveat

The information used in this assessment is based on results from ecological surveys undertaken by Wild Environmental (2018) and soil/land use studies for the 15 Mile Irrigation Project. This information has been supplemented with the results of searches of public domain databases, and available information on the listed species, including research papers and other reports. No additional specific targeted surveys for pink gidgee or the Julia Creek dunnart were undertaken in support of this assessment

1.4 Statement of limitations

This report: has been prepared by GHD for Flinders Shire Council and may only be used and relied on by Flinders Shire Council for the purpose agreed between GHD and the Flinders Shire Council as set out in section **Error! Reference source not found.** of this report.

GHD otherwise disclaims responsibility to any person other than Flinders Shire Council arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described in this report (refer section **Error! Reference source not found.** of this report). GHD disclaims liability arising from any of the assumptions being incorrect.

GHD has prepared this report on the basis of information provided by Flinders Shire Council and others who provided information to GHD (including Government authorities)], which GHD has not independently verified or checked beyond the agreed scope of work. GHD does not accept liability in connection with such unverified information, including errors and omissions in the report which were caused by errors or omissions in that information.

2. Significance Impact Assessment

2.1 Database Assessment

The primary databases used for external assessment for the likelihood of occurrence for both species includes the following:

- Queensland Government Wildlife Online database: https://apps.des.qld.gov.au/report-request/species-list/
- Queensland Government regional ecosystem vegetation and essential habitat mapping: http://qldspatial.information.qld.gov.au/biomaps/
- Commonwealth Government Protected Matters Search Tool (PMST): http://www.environment.gov.au/webgis-framework/apps/pmst/pmst.jsf
- Commonwealth Australian Fauna Directory: https://biodiversity.org.au/afd/taxa/Sminthopsis_douglasi

The Queensland Wildlife on Line database cross references various available species records (fauna and flora) and these are publicly available within user-defined search parameters. The Commonwealth Protected Matters search tool (PMST) is based on a combination of predicative habitat mapping, and actual records and similarly provides a database search tool with user-defined parameters. The Commonwealth PMST results should be considered indicative only and typically include a number species which may or may not actually occur within the Project Area locality. Subsequently PMST results must be cross referenced against the listed species ecological information and actual occurrence to assess the likelihood of each species.

Searches of the Wildlife on Line database did not identify any actual records of pink gidgee or the Julia Creek dunnart within a ten-kilometre radius of the 15 Mile Irrigation Project Area (see Appendix A).

The Queensland regional ecosystem database (v11) identifies two vegetation communities occurring over the 15 Mile Irrigation Project area which have habitat factors suitable for pink gidgee in regional ecosystems (RE) 4.3.23 and RE 4.3.14. Both of these were mapped as minor components of combination with other RE as below:

- RE 4.3.20/4.3.14, a composition of 90% RE 4.3.20, 10% RE 4.3.14 (pink gidgee supporting habitat);
- RE 4.3.4 x2d/4.3.23, a composition of 90% RE 4.3.4, 10% RE 4.3.23 (pink gidgee supporting habitat);
- RE 4.3.20/4.3.4 x2d/4.3.14, a composition of 90% RE 4.3.20, 5% RE 4.3.4, 5% 4.3.14 (pink gidgee supporting habitat.

Pink gidgee occurs in 15 known subpopulations, none of which include the Project area. The known subpopulations are widely distributed in an extent covering 34,000km^2, with the estimated abundance of 76,000 plants (DES 2017), most of which occur on basalt, a geological type not present in the Project Area, but which however is well represented in the wider Hughenden area, and with a major sub population located to the east of Hughenden.

The Commonwealth PMST identifies pink gidgee as 'likely to occur', and the Julia Creek dunnart as 'may occur' on the basis that vegetation types associated with supporting habitat for each have been mapped within the Project area. As previously noted, both of these

species have habitat factors within the 15 Mile Irrigation Project Area that suggest these species could utilise resources in the area. Other listed species on the PMST are considered not to have important or essential habitat factors present within the Project area and are not included within this assessment

2.2 Field Survey Verification

2.2.1 Pink Gidgee

Flora surveys undertaken between 27th August 2018 and 1st September 2018 by Wild Environmental scientists did not identify pink gidgee in the field. They did however identify vegetation communities (regional ecosystems), and soil type/landform elements that were consistent with habitat descriptions for pink gidgee in other regional locations.

Pink gidgee is a member of Acacia family (Mimosaceae), and is most frequently encountered as a low shrub/small tree, 3 to 5 m although individuals to 10m are known. Morphologically the species is readily identified in the field through bark and stem characteristics, long pale phyllodes, globular flower clusters and commonly in association with other Acacias including *Acacia cambegei, Acacia incana* and whitewood, *Atalaya hemiglauca*. The species is associated with 11 regional ecosystem types, and three of these were identified under the Regional Ecosystem Mapping v.11 as occurring within the 15 Mile Irrigation Project Area (refer Section 2.1).

Subsequent regional ecosystem verification by Wild Environmental (2018) resulted in the submission of a Property Map of Assessable Vegetation (PMAV) which in turn includes amendments to the RE mapping. The certified PMAV is in Appendix B. The certified PMAV amendment (based on field work by Wild Environmental) identifies that supporting habitat for pink gidgee as RE 4.3.23 is present only as a minor component (10%) of a mosaic of RE 4.3.4 x 2d/RE 4.3.23. This mosaic includes three mapped polygons with a total area of 83.69ha. RE 4.3.23, the supporting habitat for pink gidgee, comprises 10% of this mosaic; therefore the total supporting habitat as mapped for pink gidgee is 8.37ha, which represents less than 1% of the total area of the 15 Mile Irrigation Project area (918ha).

2.3 Summary of Field Work Findings, EPBC Listed Species

2.3.1 Julia Creek Dunnart

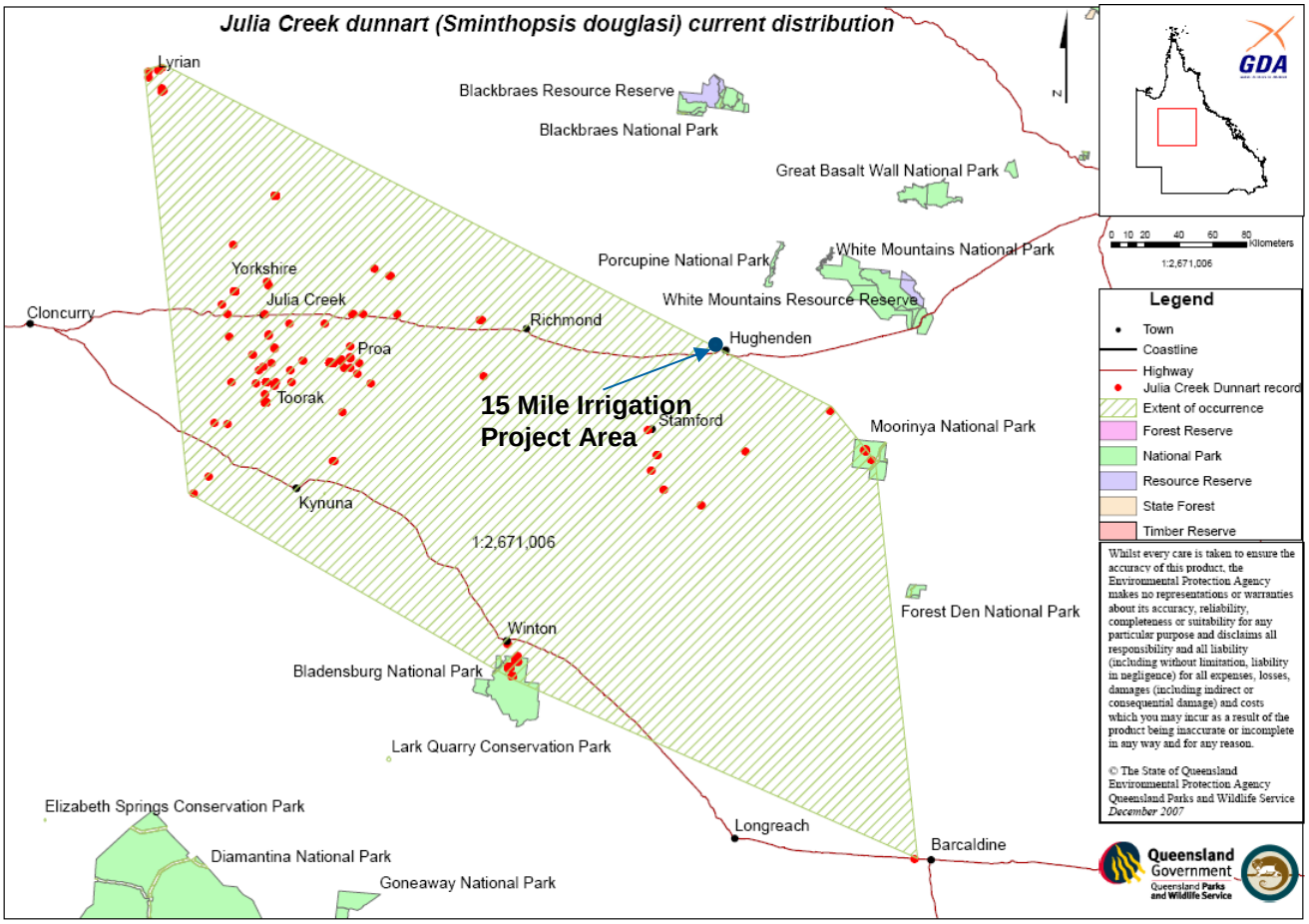
The Julia Creek dunnart is an obligatory habitat species restricted to Mitchell grass downs (*Astrebla* spp), treeless or almost so, on cracking clay soils in riparian or near riparian situations. Obligatory habitat factors necessary for the Julia Creek dunnart were identified during field work by Wild Environmental. Habitat factors cited included presence of tussock grass areas, cracking clay soils and proximity to the alluvial plains of the Flinders River. The fauna survey also noted factors that adversely impacts on the quality of the habitat for the Julia Creek dunnart including;

- Degradation of the habitat by heavy grazing.
- Presence of feral cats, confirmed through track and camera trap imagery.
- Previous clearing and thinning of vegetation.
- Limited extent of the tussock grasslands and invading species i.e. prickly Acacia and buffel grass.

The field work report by Wild Environmental concluded that while habitat factors present do reflect obligatory habitat requirements of the Julia Creek dunnart, based on the known

distribution of the species, past records, and the condition of the 15 Mile Irrigation Project Area, it is unlikely that the Julia Creek dunnart is present within the Project area. The figure below illustrates the current distribution of the Julia Creek dunnart with respect to the 15 Mile Irrigation Project Area. The main population of the dunnart is clustered around Julia Creek over 200km to the west, with a smaller population centred around Stamford and Moorinya National Park to the south, and a further disjunct population at Bladensburg National Park near Winton.

Figure 1 Julia Creek dunnart records



Source: Qld Govt, EPA National recovery plan for the Julia Creek dunnart (*Sminthopsis douglasi*).

3. Significance Impact Assessment

3.1 Guidelines

The Commonwealth Government has produced policies and guidelines to be used when assessing the significance of a project on matters of national environmental significance (i.e. including listed protected species). Those applicable to the Julia Creek dunnart and pink gidgee and used in the assessment include:

- Matters of National Environmental Significance *Significant Impact Guidelines 1.1.*
- Background Paper to EPBC Act Policy Statement 3.13 – Nationally threatened Species and Ecological Communities:
- National recovery plan for the Julia Creek dunnart (*Sminthopsis douglasi).*
- EPBC Act Listing Advice for the Julia Creek dunnart and pink gidgee.
- Common Approved Conservation Advice for the vulnerable listed *Acacia crombiei* (pink gidgee).

3.2 Essential Habitat Factors

The Queensland Department of Environment and Science (DES) recognises Essential Habitat in Queensland as: "Vegetation in which a species that is 'Endangered', 'Vulnerable', 'Rare' or 'Near Threatened' has been known to occur". Vegetation is identified as essential habitat for a species where at least three essential habitat factors are present. Essential habitat factors can include but are not limited to the following:

- Vegetation – The species or types of vegetation with which the species is associated;
- Regional ecosystem – The regional ecosystem(s) with which the species is most commonly associated;
- Land zone – The underlying geology and land form associated with a regional ecosystem;
- Altitude – The range of altitudes at which the species is found;
- Soils – The type of soil on which a species is most commonly found; and
- Landscape position - Landscape features the species is commonly associated with (e.g. creek bank, levees, lower slopes, hillsides and ridges).

There is no essential habitat for the Julia Creek dunnart or pink gidgee mapped by DES over the 15 Mile Irrigation Project area, and this is supported by the lack of formal records for both species in the immediate vicinity. However, the fauna and flora surveys and subsequent report by Wild Environmental identified that at least three of the habitat factors considered essential for both the Julia Creek dunnart and pink gidgee are found in the project area. There is mapped essential habitat for pink gidgee immediately to the east of Hughenden in the Flinders River valley in similar situations, therefore it would be considered possible that pink gidgee may occur in similar habitat within the 15 Mile Irrigation Project Area.

The habitat factors associated with pink gidgee and the Julia Creek dunnart are presented in the following table.

Table 1 Habitat Factors for Pink Gidgee and Julia Creek dunnart

Species	Common Name	NCA Status	EPBC Status	Regional Ecosystems	Vegetation Community	Altitude	Soils	Position in Landscape
Acacia crombiei	Pink gidgee	Vu	Vu	4.3.8, 4.3.23, 9.8.6. 9.8.5, 4.3.14, 4.9.7, 4.9.1, 4.3.3, 4.3.20, 4.9.11, 4.3.19.	Woodland and open woodland often associated with gidgee (*Acacia cambagei*) and white wood (*Atalaya hemiglauca*)	100 - 350m.	Predominantly basalt derived soils, alluvials and sandstone	Terrace
Sminthopsis douglasii	Julia Creek Dunnart	E	Vu		Mitchell grass (*Astrebla* spp.) tussock grasslands (treeless or nearly so) characterised by predominantly grass-covered cracking clay soils	100 - 350m.	Cracking stony/ashy clay soils	Predominantly in riparian areas of undisturbed grasslands

3.3 Significant Impact Assessment Guidelines 1.1

3.3.1 Significant Impact Criteria – Vulnerable Species

An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it will

- Lead to a long-term decrease in the size of a population of a species;
- Reduce the area of occupancy of the 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 a population;
- Modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline;
- Result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered species' habitat;
- Introduce disease that may cause the species to decline or;
- Interfere substantially with the recovery of the species.

3.3.2 Definition of a Population

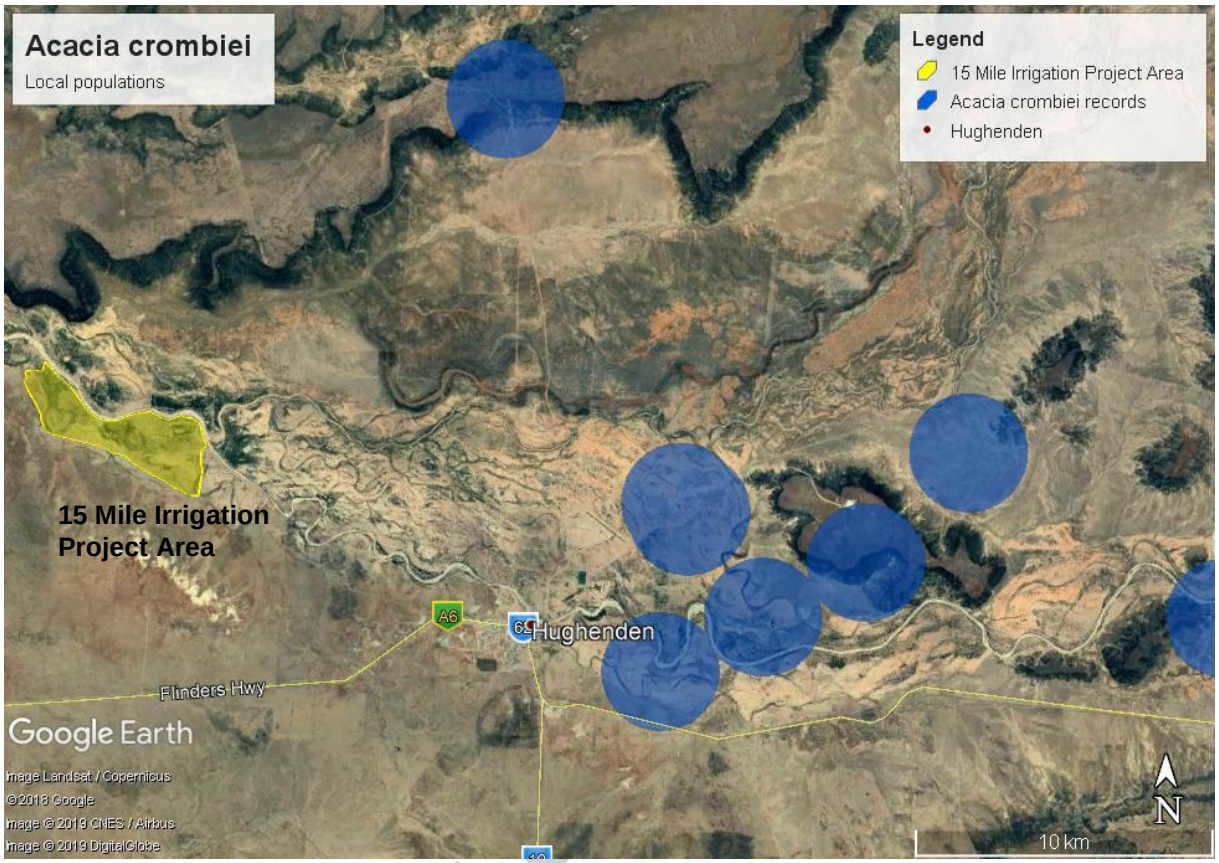
The *Matters of National Environmental Significance Significant Impact Guidelines 1.1* identifies a "Population" defined under the EPBC Act as an occurrence of the species in a particular area. In relation to critically endangered, endangered or vulnerable threatened species, occurrences include but are not limited to:

- A geographically distinct regional population, or collection of local populations, or
- A population, or collection of local populations, that occurs within a particular bioregion.

For the purposes of this assessment the population of pink gidgee within the general habitat extent modelled area (including the 15 Mile Irrigation Project area) falls within the scope of both the above definitions. The Queensland DES has produced essential habitat maps for pink gidgee based on formal herbarium records, and this clearly identifies the nearest pink gidgee records east of Hughenden. Therefore this assessment has assumed any occurrences of pink gidgee within the small area of supporting habitat within the 15 Mile Irrigation Project area would be part of the geographically distinct population broadly represented by the existing records east of Hughenden.

There are no records in the vicinity of the 15 Mile Irrigation Project area for the Julia Creek dunnart. The nearest records are approximately 50km to the south-west and south-east of the Project area, and comprise the closest population as defined above. Any Julia Creek dunnarts within the 15 Mile Irrigation Project area would therefore constitute a new, and geographically disjunct population in their own right. As noted, the Wild Environmental field surveys and report have concluded that it is unlikely that Julia Creek dunnarts are present. Notwithstanding, for the purposes of this assessment it is assumed that the habitats present at the 15 Mile Irrigation Project area may support the Julia Creek Dunnart.

Figure 2 Acacia crombiei populations closest to 15 Mile



3.4 Significant Impact Assessment, *Acacia crombiei*

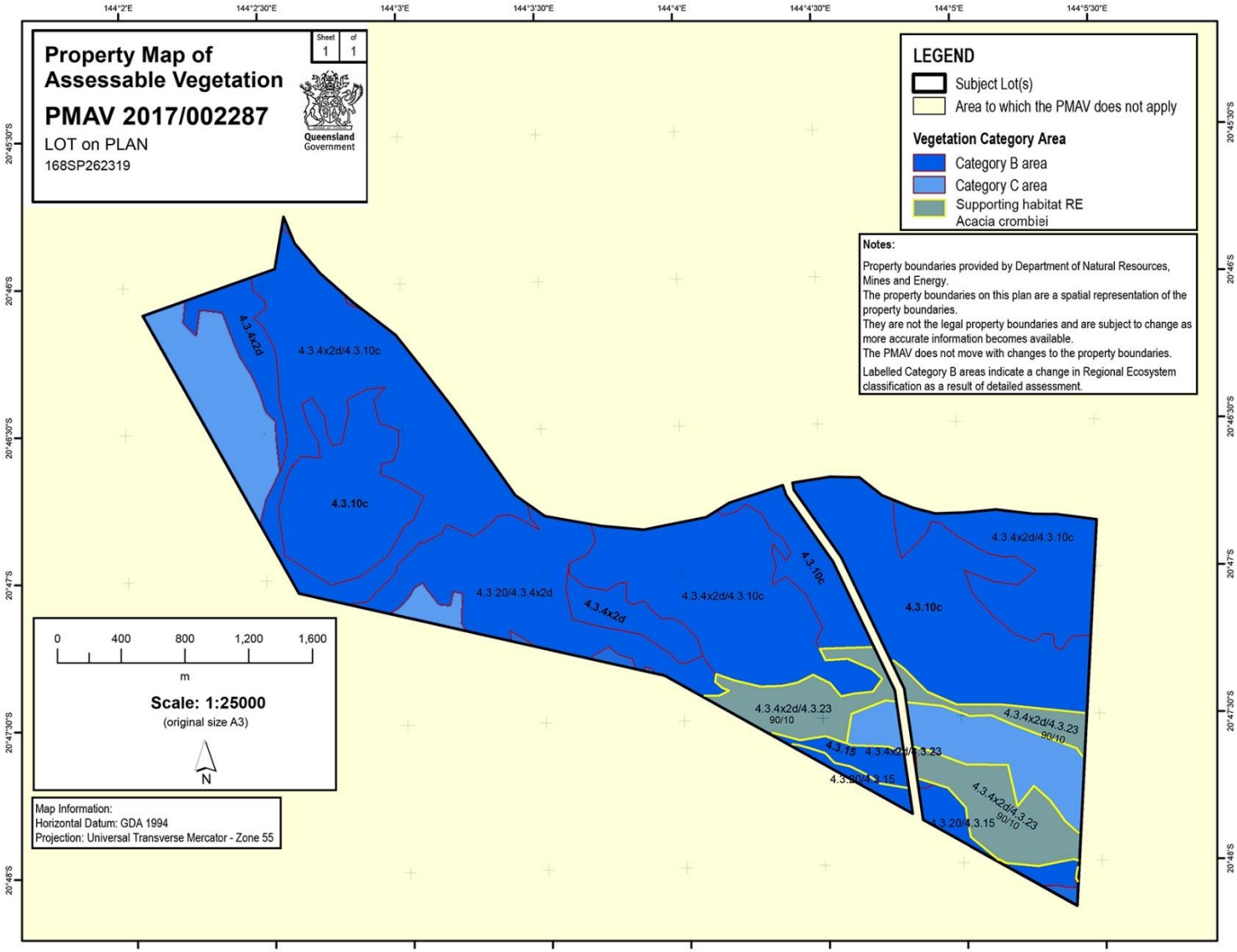
Table 2 Significance Assessment of the Project on pink gidgee

Guideline Criteria	Assessment Criteria
Lead to a long-term decrease in the size of a population of a species.	Vegetation surveys and subsequent approval of a certified PMAV for the 15 Mile Irrigation Project area identified only one regional ecosystem mosaic that contained habitat factors for pink gidgee. The total area of disturbance to potential pink gidgee habitat represented by RE4.3.23 is approximately 1.8ha. The proposed project will not lead to a long-term decrease in the size of the population of pink gidgee as; - The total area of occupancy of the species is approximately 1000km^2 within a broader range of approximately 36,000km^2. The impacts on 1.8ha of supporting habitat is negligible by comparison with the total available habitat represented elsewhere. - The integrity of the habitat present has been compromised through clearing, grazing and weed invasion.
Reduce the area of occupancy of a population.	The total area of potential occupancy by pink gidgee (based on RE habitat preference) is 8.4ha across the Project area. The reduction in the potential area of occupancy (the water storage area) is approximately 1.8ha. By comparison with the regional population in the Hughenden area this is a minor reduction of marginal habitat and will not result overall in the reduction of area occupied by the known pink gidgee population.

Guideline Criteria	Assessment Criteria
Fragment an existing population into two or more populations.	The existing known population is centred east of the town of Hughenden. The 15 Mile Irrigation Project will not result in the fragmentation of this population into two or more populations.
Adversely affect habitat critical to the survival of a species.	Habitat critical to the survival of pink gidgee is not represented within the 15 Irrigation Project Area. Only one RE is present that supports pink gidgee habitat, and this RE (4.3.23) comprises only 10% of a larger RE aggregation that does not support pink gidgee habitat. There are no 100% dominated RE that support pink gidgee in the Project area. The construction of the 15 Mile Irrigation Project will not affect habitat critical to the survival of pink gidgee
Disrupt the breeding cycle of a population.	Pink gidgee is a typical Acacia with seeds dispersed by wind and animals, notably ants carrying seed to their burrows. The construction of the 15 Mile Irrigation Project will not disrupt the breeding cycle of pink gidgee in any way.
Modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline.	The potential area of occupancy for pink gidgee that will be affected by the project is approximately 1.8ha. The known combined populations of pink gidgee occupy an area of approximately 1,000km^{w} within a total range distribution of 36,000km$^{2//}$ The 15 Mile Irrigation Project will not result in the decline of available habitat or quality to pink gidgee and will not contribute to a population decline of the species.
Result in invasive species that are harmful to an endangered species becoming established in the endangered species' habitat.	The 15 Mile Irrigation Area has historically (and currently) been used for cattle grazing, and has a high representation by exotic species that that are recognised as contributing to the decline in the quality of habitat in the region generally. The 15 Mile Irrigation Project may have minor beneficial impacts as proposed irrigation areas will result in removal weed species and potentially reduce the weed seed vectors currently contributing to native vegetation degradation. The high value crops that are proposed to be introduced are cultivars of common horticultural crops with limited to no ability to propagate in the wild and are dependent on irrigation for their survival.
Introduce disease that may cause the species to decline.	There are no known diseases affecting pink gidgee that could be introduced through the introduction of the 15 Mile Irrigation Project. There is a very rare chance that soil pathogens that affect the health of vegetation may be introduced via clearing machinery but there would be no known introduced diseases that may cause the species to decline.
Interfere substantially with the recovery of the species.	There are no known populations of pink gidgee within the 15 Mile Irrigation Project area, and the loss of 1.8ha of potential habitat is minor and will not interfere substantially with the recovery of the species.

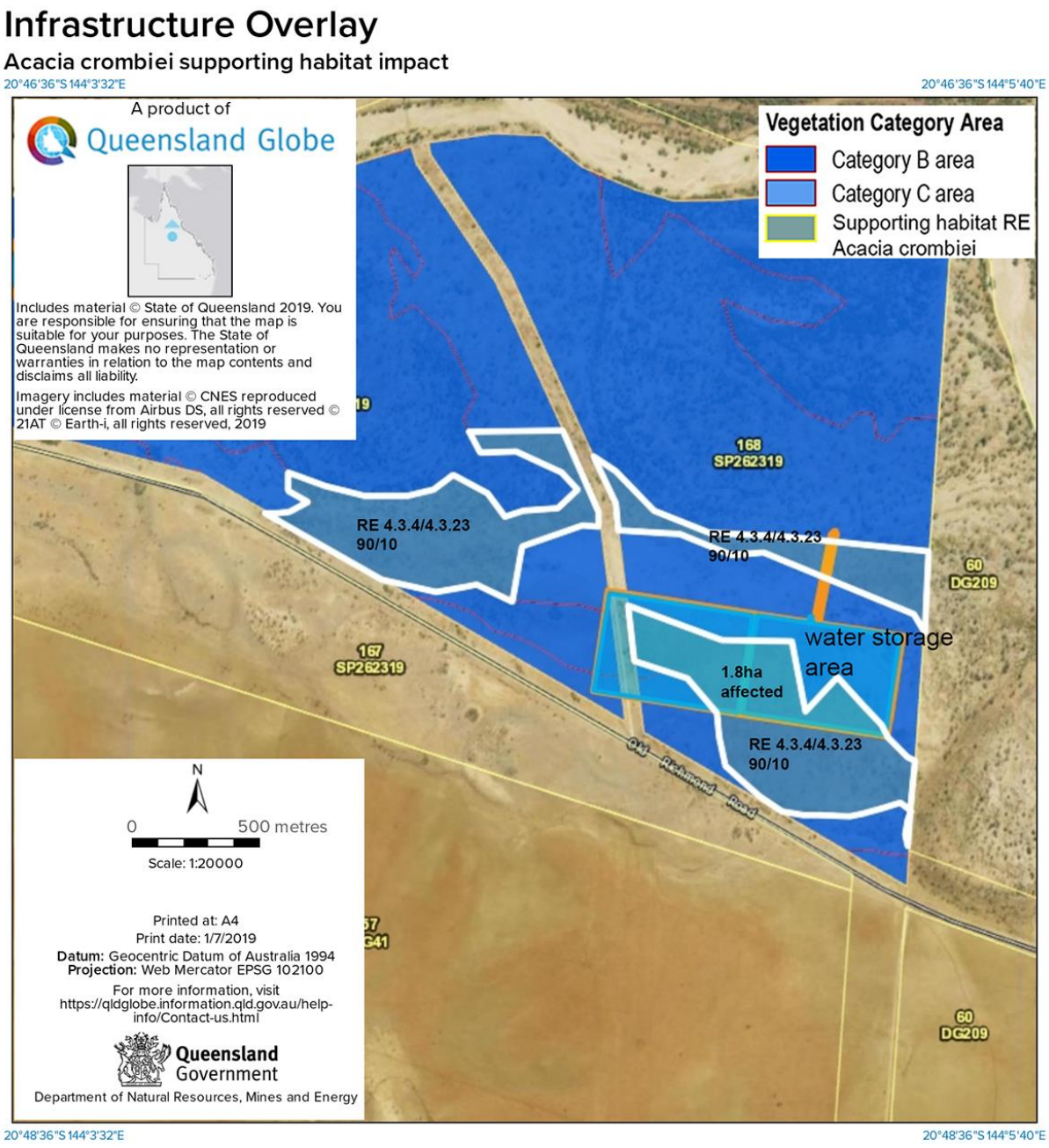
A summary of the loss of supporting habitat of pink gidgee (RE 4.2.23) based on the certified PMAV and as verified by Wild Environmental is shown over in Figure 3.

Figure 3 Supporting Habitat of *Acacia crombiei* within Project area



A summary of the impact areas of the 15 Mile Irrigation Project on pink gidgee habitat is shown below in Figure 4.

Figure 4 Project infrastructure impacts on supporting habitat



3.5 Significant Impact Assessment, *Sminthopsis douglasi*

The following table sets out the significant impact assessment of the proposed 15 Mile Irrigation Project construction on the Julia Creek dunnart using the significant impact criteria as identified in Section 3.3.

Table 3 Significance assessment for the Julia Creek dunnart

Guideline Criteria	Assessment Criteria
Lead to a long-term decrease in the size of a population of a species.	Surveys of the 15 Mile Irrigation Area identified habitat factors present that may support the Julia Creek dunnart. However, these surveys also identified factors that heavily discount the presence of the species including feral cats (known predators), previous clearing and degradation and compaction of tussock grassland habitat through heavy grazing pressure. In the absence of a confirmed population presence, marginal habitat suitability owing to historical and ongoing impacts, and being outside the known distribution of the species, the 15 Mile Irrigation Project will not lead to a long-term decrease in the size of the population of the Julia Creek dunnart.
Reduce the area of occupancy of a population.	There are no known records of Julia Creek dunnarts in the 15 Mile Irrigation Project area. The habitat affected is marginal, subject to ongoing pressure, and it has been identified through field verification that the habitat present is unlikely to support the Julia Creek dunnart owing to ongoing impacts and historical usage of the area. Thus, while the proposed works may reduce the potential area available as habitat, it will not result in a reduction in the area of occupancy of a population.
Fragment an existing population into two or more populations.	The nearest population of the Julia Creek dunnart is approximately 50k m to the south-west and south-east of the Project area. The Project will not result in the fragmentation of an existing population.
Adversely affect habitat critical to the survival of a species.	No habitat factors critical to the survival of the Julia Creek dunnart present are within the proposed works area. While some essential habitat factors were identified during field survey, the survey report concluded that these habitats were subject to past and ongoing pressures, were of low integrity and unlikely to support Julia Creek dunnarts. The construction of the 15 Mile Irrigation Project will not affect habitat critical to the survival of the Julia Creek dunnart.
Disrupt the breeding cycle of a population.	Julia Creek dunnarts are not known in the local region, and were not reported within the Project area. Habitat factors important to the dunnart are marginal, and subject to degradational processes None of the activities associated with the 15 Mile Irrigation Project will disrupt the breeding cycle of any population of Julia Creek dunnarts.

Guideline Criteria	Assessment Criteria
Modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline.	No habitat factors critical to the survival of the Julia Creek dunnart are present within the 15 Mile Irrigation project area. While field surveys identified the presence of some habitat factors supporting the Julia Creek dunnart, surveys also identified ongoing degradation processes including overgrazing and weed introductions that resulted in the Mitchell grass downs habitats within the Project area being suboptimal for the Julia Creek dunnart. Subsequently the loss of approximately 135ha of this suboptimal habitat does not represent a loss of habitat to the extent that the Julia Creek dunnart is likely to decline.
Result in invasive species that are harmful to an endangered species becoming established in the endangered species' habitat.	The 15 Mile Irrigation Area has historically (and currently) been used for cattle grazing, and has a high representation by exotic species that that are recognised as contributing to the decline in the quality of habitat for the Julia Creek dunnart elsewhere in the region. The development of the Project area will result in a minor beneficial outcome in reducing the total of occupancy of weeds (notably prickly acacia) and thereby reducing the local weed source vectors. The crops to be introduced are high value horticultural crops dependent on irrigation for their survival. These cultivars will not establish outside the farmed areas and do not pose a threat to habitat values outside of the cropping areas.
Introduce disease that may cause the species to decline.	There are no known diseases affecting the Julia Creek dunnarts that could be introduced through the introduction of the 15 Mile Irrigation Project. There is a very rare chance that soil pathogens that affect the health of Mitchell grasslands habitat may be introduced via clearing machinery but there are no known introduced diseases that may cause the species to decline.
Interfere substantially with the recovery of the species.	There are no known Julia Creek dunnart populations within the 15 Mile Irrigation Project area, and field studies have identified that the habitat factors present have been subject to past and ongoing stresses with the Project area more than 50km from the nearest population. Subsequently studies have concluded that it is unlikely that the Julia Creek dunnart would utilise habitats in the Project area. Current recovery efforts are focused on known populations and the proposed Project will not interfere substantially with the recovery of the species.

4. Summary and Recommendation

4.1 Referral to the Commonwealth under the Provisions of the EPBC Act

4.1.1 Julia Creek Dunnart

The 15 Mile Irrigation Project area is located on the extreme north-eastern boundary of the known range of the Julia Creek dunnart. The Julia Creek dunnart is a habitat obligate species, entirely restricted to treeless (or almost so) Mitchell grass downs (*Astrebla* spp) on cracking clay soils in near riparian situations. The habitat of the species has demonstrably been shown by research to be vulnerable to soil compaction through grazing, and to invasion by introduced plant species including buffel grass and prickly acacia. The 15 Mile Irrigation Project area is a former part of the Queensland State Stock Route Network, and is currently still agisted for grazing. There is a high incidence of introduced species present, and feral animals, notably predators such as cats, are known to be present.

This assessment has concluded that the development of the 15 Mile Irrigation Project will not have a quantifiable impact, either direct, indirect or cumulative on Julia Creek dunnart individuals or populations, nor on supporting habitat for the reasons summarised below:

- the small area of potential habitat represented within the Project area to be impacted,
- the historical and current landuse as a stock reserve, incompatible with the maintenance of obligate habitat conditions,
- the general low integrity of available habitat due to invasive species,
- introduced predator presence, and
- lack of confirmed records of the dunnart at the known limit of its range.

Subsequently a referral to the Commonwealth under the provisions of the EPBC Act is not required in relation to Project impacts on the Julia Creek dunnart.

4.1.2 Pink Gidgee

Pink gidgee (*Acacia crombiei*), is a well-documented species with a major sub-population located immediately to the east of Hughenden. There are however no records of the species within 15km of the Project. Assessment of the vegetation by Wild Environmental (2018) resulted in a PMAV which included changes to the vegetation mapping of the previous RE mapping (v11) for the Project lot. The certified PMAV supports the field survey RE verifications of Wild Environmental. Of the 11 RE that provide supporting habitat to pink gidgee, only one is confirmed as occurring on site (RE 4.3.23), and then only as a component of a mosaic with other REs. The RE supporting pink gidgee habitat comprises 10% of the RE mosaic, and overall comprises less than 1% (0.91ha) of the total of the Project area. Further, the only infrastructure proposed to be located within this supporting habitat is a water storage area which will impact on 18.03ha of the RE mosaic. As RE 4.3.23 (supporting habitat for pink gidgee) comprises only 10% of this community, the impact overall, on supporting habitat for pink gidgee is 1.8ha. This represents less than less than 0.2% of the total 15 Mile Irrigation Project Area. impact A 'significant impact', as defined by the Significant Impact Guidelines, is an impact which is important, notable, or of consequence, having regard to its context or intensity. *Should* pink gidgee be present within this marginal area of habitat then the impacts on any individuals would not be deemed important notably or intensity, having no impact on the overall population of the species and does not adversely affect the survival of the species in the wild.

With regard to the summary above, the proposed 15 Mile Irrigation Area Project is not deemed to have a significant impact on pink gidgee (*Acacia crombiei*) or its supporting habitat, and a referral to the Commonwealth under the provisions of the EPBC Act is not required.

5. References

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https://projects.ghd.com/oc/NQOC2/15mileiarfinalsubmis/Delivery/Documents/4221213_REP_EPBC Significant Impact Assessment_15 Mile Irrigation Project.docx

Document Status

Rev No.	Author	Reviewer		Approved for Issue		
		Name	Signature	Name	Signature	Date
DRAFT	A Small					

Appendices

Appendix A

Database search results, Wildlife Online

Queensland Government

Wildlife Online Extract

Search Criteria: Species List for a Specified Point
Species: All
Type: All
Status: All
Records: All
Date: All
Latitude: -20.7818
Longitude: 144.0621
Distance: 10
Email: andrew.small@environmentpacific.com
Date submitted: Wednesday 17 Apr 2019 09:10:05
Date extracted: Wednesday 17 Apr 2019 09:20:03

The number of records retrieved = 33

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	amphibians	Bufonidae	*Rhinella marina*	cane toad	Y			1
animals	birds	Accipitridae	*Haliastur sphenurus*	whistling kite		C		1
animals	birds	Accipitridae	*Milvus migrans*	black kite		C		2
animals	birds	Alaudidae	*Mirafra javanica*	Horsfield's bushlark		C		1
animals	birds	Artamidae	*Artamus cinereus*	black-faced woodswallow		C		6
animals	birds	Artamidae	*Cracticus tibicen*	Australian magpie		C		2
animals	birds	Artamidae	*Cracticus nigrogularis*	pied butcherbird		C		1
animals	birds	Cacatuidae	*Eolophus roseicapilla*	galah		C		1
animals	birds	Columbidae	*Ocyphaps lophotes*	crested pigeon		C		2
animals	birds	Estrildidae	*Taeniopygia guttata*	zebra finch		C		1
animals	birds	Falconidae	*Falco cenchroides*	nankeen kestrel		C		2
animals	birds	Monarchidae	*Grallina cyanoleuca*	magpie-lark		C		1
animals	birds	Rhipiduridae	*Rhipidura leucophrys*	willie wagtail		C		2
plants	Equisetopsida	Aizoaceae	*Zaleya galericulata subsp. galericulata*			C		1/1
plants	Equisetopsida	Amaranthaceae	*Amaranthus cochleitepalus*			C		1/1
plants	Equisetopsida	Amaranthaceae	*Aerva javanica*		Y			1/1
plants	Equisetopsida	Amaranthaceae	*Amaranthus mitchellii*	Boggabri weed		C		2/2
plants	Equisetopsida	Asteraceae	*Peripleura arida*			C		1/1
plants	Equisetopsida	Capparaceae	*Capparis nummularia*			C		1/1
plants	Equisetopsida	Chenopodiaceae	*Salsola australis*			C		1/1
plants	Equisetopsida	Cleomaceae	*Cleome viscosa*	tick-weed		C		2/2
plants	Equisetopsida	Euphorbiaceae	*Euphorbia coghlanii*			C		1/1
plants	Equisetopsida	Euphorbiaceae	*Euphorbia inappendiculata var. queenslandica*			C		1/1
plants	Equisetopsida	Fabaceae	*Tephrosia sp. (Magazine Hill P.Jones 365)*			C		1/1
plants	Equisetopsida	Fabaceae	*Cullen cinereum*			C		2/2
plants	Equisetopsida	Malvaceae	*Sida laevis*			C		1/1
plants	Equisetopsida	Mimosaceae	*Vachellia nilotica*	prickly acacia	Y			6
plants	Equisetopsida	Mimosaceae	*Neptunia amplexicaulis f. amplexicaulis*			C		1/1
plants	Equisetopsida	Phyllanthaceae	*Notoleptopus decaisnei*			C		1/1
plants	Equisetopsida	Poaceae	*Cenchrus ciliaris*		Y			1/1
plants	Equisetopsida	Poaceae	*Iseilema vaginiflorum*	red flinders grass		C		1/1
plants	Equisetopsida	Poaceae	*Bothriochloa pertusa*		Y			1/1
plants	Equisetopsida	Sparrmanniaceae	*Corchorus pumilio*			C		1/1

CODES

I - Y indicates that the taxon is introduced to Queensland and has naturalised.

Q - Indicates the Queensland conservation status of each taxon under the *Nature Conservation Act 1992.* The codes are Extinct in the Wild (PE), Endangered (E), Vulnerable (V), Near Threatened (NT), Least Concern (C) or Not Protected ( ).

A - Indicates the Australian conservation status of each taxon under the *Environment Protection and Biodiversity Conservation Act 1999.* The values of EPBC are Conservation Dependent (CD), Critically Endangered (CE), Endangered (E), Extinct (EX), Extinct in the Wild (XW) and Vulnerable (V).

Records – The first number indicates the total number of records of the taxon for the record option selected (i.e. All, Confirmed or Specimens).
This number is output as 99999 if it equals or exceeds this value. The second number located after the / indicates the number of specimen records for the taxon.
This number is output as 999 if it equals or exceeds this value.

Appendix B

Certified Property Map of Assessable Vegetation

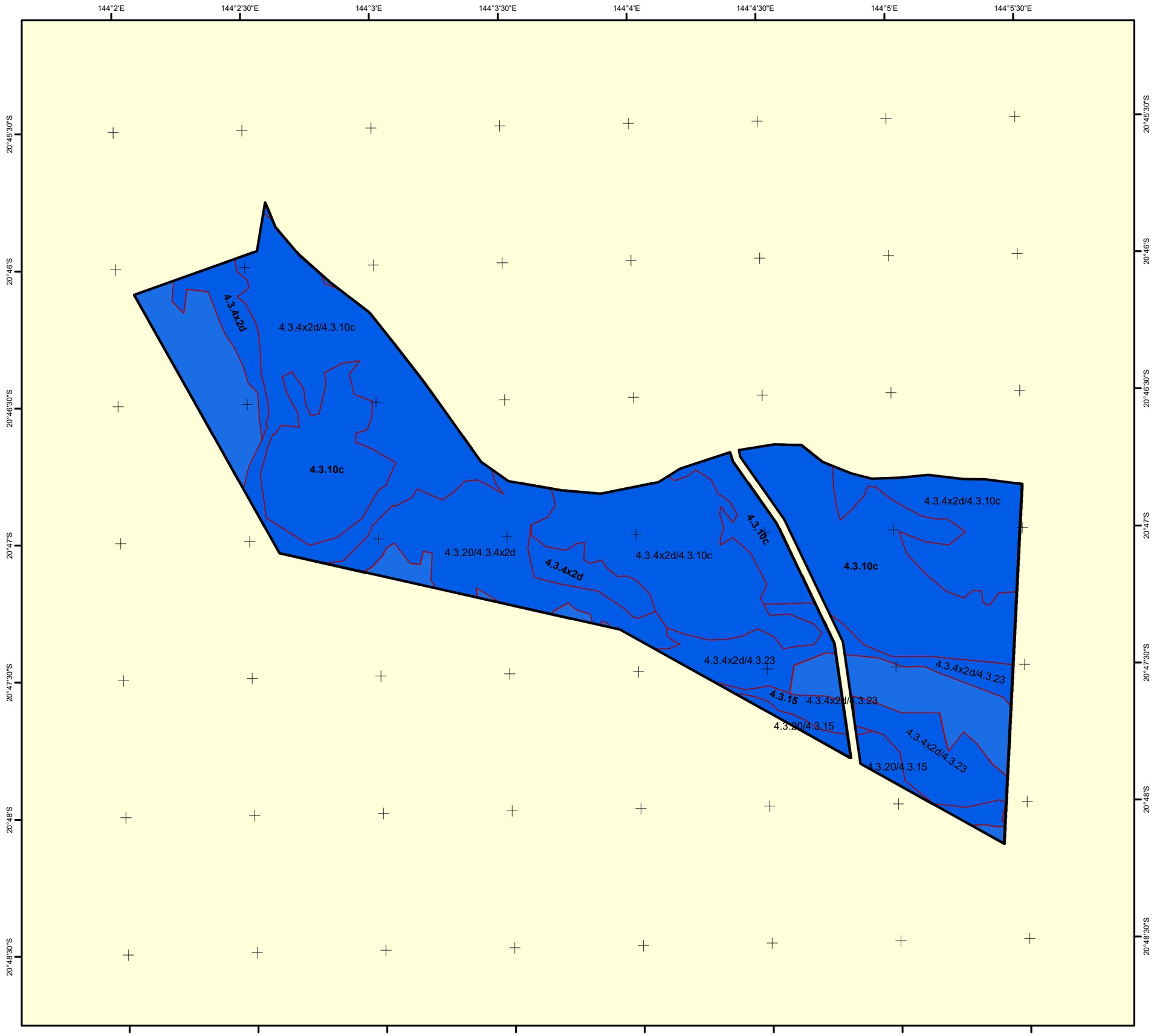
Property Map of Assessable Vegetation

PMAV 2017/002287

LOT on PLAN
168SP262319

Sheet 1 of 1

Queensland Government



0 400 800 1,200 1,600
m

Scale: 1:25000
(original size A3)

N

LEGEND

- Subject Lot(s)
- Area to which the PMAV does not apply

Vegetation Category Area

- Category B area

Notes:

Property boundaries provided by Department of Natural Resources, Mines and Energy.
The property boundaries on this plan are a spatial representation of the property boundaries.
They are not the legal property boundaries and are subject to change as more accurate information becomes available.
The PMAV does not move with changes to the property boundaries.

Labelled Category B areas indicate a change in Regional Ecosystem classification as a result of detailed assessment.

Map Information:
Horizontal Datum: GDA 1994
Projection: Universal Transverse Mercator - Zone 55

This PMAV is made under Section 20C of the *Vegetation Management Act 1999*.

Signed for the Chief Executive of the Department of Natural Resources, Mines and Energy by:

Name: Lisa Gale

Title: Senior Natural Resource Management Officer

Signature:

Date: 31 January 2019

Map Prepared by: MM

Department of Natural Resources, Mines and Energy
PO Box 5318, Townsville, Qld, 4810

Map Preparation Date: 31/01/2019

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