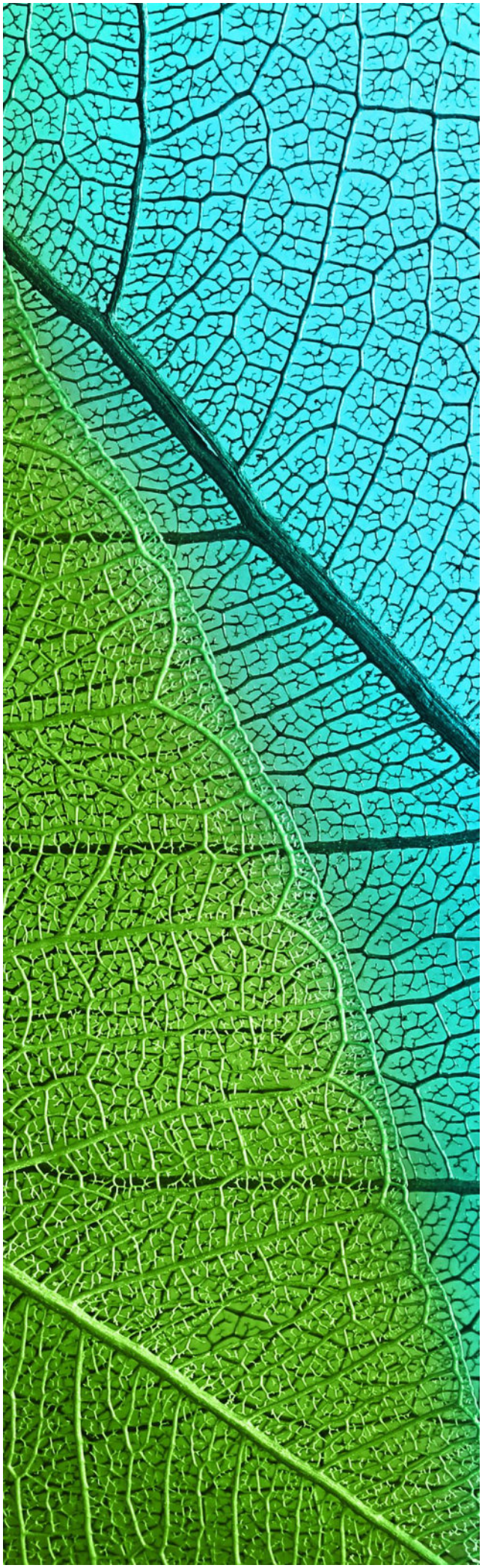

Modeina Estate Precinct 2 (EPBC 2011/6063)

Compliance Report – Year 2

Prepared for Dennis Family Corporation

December 2019
Report No. 7045 (73.3)

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Contents

1. Introduction 4
2. Onsite monitoring 6
2.1. Compliance monitoring – December 2019 6
2.2. Growling Grass Frog monitoring 6
3. Compliance with approval conditions 7
1.1. Conditions 1 and 2 – construction activities 7
1.2. Conditions 3 and 4 – Growling Grass Frog Management Plan 7
1.3. Condition 5 – Spiny Rice-flower impacts in Project Area A1 13
1.4. Condition 6 – Project Area A1 offsets secured and implemented 14
1.5. Condition 6A – Project Area A2 offsets secured 15
1.6. Conditions 7 & 8 – Project Area B offsets secured and implemented 16
1.7. Conditions 13, 14, 16 & 17 – no construction activities in Project Areas C1, C2 & D 19
1.8. Condition 14A – Grassland Reserve Management Plan 20
1.9. Conditions 18, 19, 21 & 26 28

Tables

Table 1: Weed cover estimates – Grassland Reserve 22

Figures

Figure 1: Modeina Grassland Reserve – December 2019 inspection 26

Appendices

Appendix 1: Approval 2011/6063 – Consolidated Variation Notice dated 9/11/2018 30
Appendix 2: Growling Grass Frog monitoring report – Year 3 42
Appendix 3: Karabeal compliance reporting 53
Appendix 4: Campbelltown compliance reporting 60
Appendix 5: Written notification that Condition 15 no longer applies 68

Appendix 6: Acknowledgement of commencement of action 69
Appendix 7: Weed survey reports 71
Appendix 8: Deed of Covenant – Cressy offset site 72

1. Introduction

This Compliance Report addresses the conditions of approval 2011/6063 under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) held by the approval holder – DFC (Project Management) Pty Ltd – for the Modeina Precinct 2 residential development. The Approval was dated 25th July 2015; a Consolidated Variation Notice was issued by the Department of the Environment and Energy on 9th November 2018. This Compliance Report refers to this current Notice and is referred to herein as the 'Approval'.

Construction activities commenced within Precinct 2 as defined in Appendix A of the approval on 9th October 2017. To date construction activities have commenced in Project Areas A1 and B only. This report provides evidence of compliance with the conditions of the approval relevant to these two project areas, in particular:

- Condition 1 – construction activities contained to the overall project area;
- Condition 2 – the implementation of sediment and erosion control measures during construction activities;
- Conditions 3 & 4 – Growling Grass Frog Management Plan;
- Condition 5 – no more than eleven (11) Spiny Rice-flower impacted in Project Areas A1 and A2;
- Condition 6 – offsets secured and offset management implemented for Project Area A1;
- Condition 6A – offsets for impacts associated with Project Area A2;
- Conditions 7 & 8 – offsets secured and offset management implemented for Project Area B;
- Conditions 13, 14, 16 & 17 – construction activities not undertaken in Project Areas C1, C2 & D and the Grassland Reserve;
- Condition 14A – Grassland Reserve Management Plan;
- Condition 18 – offset shapefiles and attributes provided to the Department;
- Condition 19 – advising the Minister within 30 days of commencement of construction;
- Condition 21 – preparation of this Compliance Report; and
- Condition 26 – approved management plans published on the approval holder's website within 1 month of approval.

This Compliance reports draws together information from the following sources:

- Reporting, correspondence and mapping files compiled by Nature Advisory (formerly Brett Lane and Associates (BL&A)) on behalf of DFC (Project Management) Pty Ltd;
- Onsite monitoring undertaken by botanists from Nature Advisory on 2nd December 2019;
- Weed management reporting provided by Australian Ecosystems; and
- Offset landowner monitoring reports.

This report was prepared by a team from Nature Advisory comprising Annette Cavanagh (Botanist), Chris Armstrong (Botanist), Brett Macdonald (Senior Ecologist) and Chris Dunk (Senior Ecologist & Project Manager), with additional information supplied by the approval holder. Sources of information and observations are indicated throughout.

2. Onsite monitoring

2.1. Compliance monitoring – December 2019

An onsite compliance monitoring inspection was conducted on the 2nd December 2019. During this assessment, all areas of Precinct 2 were inspected on foot, including the interfaces of areas currently undergoing construction works with surrounding land currently protected as 'No Go' areas, the Growling Grass Frog Management Buffer and the Grassland Reserve.

Information relevant to the conditions of the approval was gathered throughout Precinct 2 to supplement information provided by the approval holder. This included information on the following:

- Precinct 2 development area:
  - The presence of 'No Go' fencing and sediment/erosion control measures on the boundaries between construction areas and 'No Go' areas;
  - The extent of noxious and high threat weeds and evidence of weed control;
- Grassland Reserve:
  - Weed cover estimates for each weed species;
  - Overall weed cover estimate;
  - Information on the status and health of Spiny Rice-flower plants;
  - Assessment of biomass;
  - Monitoring of evidence of pest animals; and
  - Assessment of the integrity of fencing around the perimeter of the reserve;
- Growling Grass Frog Management Buffer:
  - Evidence of personnel briefing;
  - Overall weed cover estimate and evidence of weed control;
  - Evidence of the removal of pest animal harbour; and
  - Status of any seeding/revegetation works.

2.2. Growling Grass Frog monitoring

Pre-construction Growling Grass Frog population and habitat monitoring commenced in January 2017 during the November 2016–February 2017 breeding season. A further three annual breeding season population and habitat monitoring events were undertaken in November 2017 (one month following commencement of construction (Year 1), December 2018/January 2019 (Year 2) and November 2019 (Year 3).

A summary of the monitoring methods and outcomes is provided in Section 1.2.

3. Compliance with approval conditions

The Approval conditions (relate to the protection of the following Matters of National Environmental Significance (MNES) listed under the EPBC Act and located across six project areas within the precinct – Project Areas A1, A2, B, C1, C2 & D:

- The grassland ecological community *Natural Temperate Grassland of the Victorian Volcanic Plain* (NTGVVP) – located in discreet patches across the precinct;
- Striped Legless Lizard (*Delma impar*) habitat – coinciding with all areas of mapped NTGVVP; and
- Spiny Rice-flower (*Pimelea spinescens* subsp. *spinescens*) plants.

The definitions from the Approval that apply to the terms shown in bold throughout this document are listed in of this report.

1.1. Conditions 1 and 2 – construction activities

Conditions 1 and 2 of the Approval read as follows:

1. The **approval holder** must ensure that **construction activities** do not occur outside of the **project area** as illustrated at Appendix A.

2. The **approval holder** must implement sediment and erosion control measures consistent with **best practice pollution, sediment and erosion control guideline(s)** for the duration of **construction activities**.

Condition 1 compliance

As no construction activities were underway at the time of the December 2019 assessment, construction fencing was being removed from Project Area A1. This fencing will be reinstated once construction commences in other areas (January 2020), and will restrict construction activities to the relevant project area.

Condition 2 compliance

During the December 2019 compliance monitoring inspection undertaken by Nature Advisory, the sediment fencing that was installed in 2018 had been dismantled as no construction was taking place. The approval holder was informed that some of the fencing materials remained onsite and advised that this would be rectified immediately. Sediment fencing must be reinstalled to protect areas abutting future construction works prior to their recommencement, and must be constructed according to the requirements of Construction Environmental Management Plans approved by Melton City Council – the Responsible Authority for State approvals.

No stockpiles, machinery/equipment laydown or washdown areas were observed within the Growling Grass Frog Management Buffer – i.e. within 35 metres of the Kororoit Creek.

1.2. Conditions 3 and 4 – Growling Grass Frog Management Plan

Conditions 3 and 4 of the Approval read as follows:

3. The **approval holder** must prepare a site-specific **Growling Grass Frog** Management Plan; which is required to be consistent with **best practice Growling Grass Frog management guidelines**. The plan must outline how significant impacts to **Growling Grass Frogs** will be avoided or mitigated and as a minimum must include:
    a. Management measures demonstrating how the **Growling Grass Frog buffer zone** will be demarcated to minimise vehicle access;
    b. Details of revegetation, **environmental weed** control measures and other management activities within the **Growling Grass Frog buffer zone**;
    c. Details of any **construction activities** and management measures to avoid **significant impacts** during construction; and
    d. Measures to ensure any on-site personnel will be informed of their obligations under the **Growling Grass Frog** Management Plan.

4. **Construction activities** must not commence in **Project Areas A1, A2, C1, C2** and **D** until the site specific **Growling Grass Frog** Management Plan has been approved by the **Minister** in writing. Construction in **Project Area B** can proceed prior to approval of the site-specific **Growling Grass Frog** Management Plan. The site specific **Growling Grass Frog** Management Plan must be implemented.

Conditions 3 and 4 compliance

BL&A Report 7045 (29.7) Growling Grass Frog Management Plan (GGFMP) was approved by the Minister in writing on 20th September 2017 and is available for viewing on the proponent's website at https://www.denniscorp.com.au/about-dennis-family/initiatives-and-awards/sustainability/. Of the project areas listed above, construction commenced in Project Area A1 (only) on 9th October 2017.

This compliance reporting is made against the construction phase management and monitoring actions for the Growling Grass Frog Management Buffer (GGFMB) outlined in Tables 6 and 7 of the GGFMP. These actions and the relevant section of the GGFMP are listed below under the four core requirements of the Plan outlined in Condition 3:

- Demarcation of Growling Grass Frog Management Buffer – Condition 3a:
    - Staged construction and temporary access restrictions (GGFMP Section 5.2.2)
- Weed control measures and revegetation – Condition 3b:
    - Weed management (GGFMP Sections 5.2.3 and 6.2)
    - Revegetation (GGFMP Section 6.4)
- Construction management measures to avoid significant impacts – Condition 3c:
    - Temporary access restrictions (GGFMP Section 5.2.2)
    - Sediment control (GGFMP Section 5.2.4)
    - Works within the GGFMB (GGFMP Section 5.2.5)
- On-site personnel informed of their obligations – Condition 3d:
    - Personnel briefing (GGFMP Section 5.2.1)

A summary of the outcomes of Growling Grass Frog habitat quality monitoring and population monitoring (Section 6.6.2 and Table 7 of the GGFMP) is also provided.

Personnel briefing

A briefing was provided by BL&A on 26th September 2017 to all key personnel on the presence of occurrence of Growling Grass Frog in the Kororoit Creek environs and the emergency protocols in the event that the species is encountered during construction. Key personnel present included DFC (Project Management) Pty Ltd project managers, as well as all construction site managers.

Information brochures on this species were provided for display in all site offices, providing a physical description of the species, their population distribution, habitat and similar species. Construction site managers have included this briefing in the environmental briefing for all construction personnel.

During the November 2018 BL&A inspection, brochures were observed on display in site offices. As no construction is currently underway, there is no site office at present.

Staged construction and temporary access restrictions

As outlined in the compliance reporting against Condition 1, 'No Go' construction fencing was inspected by BL&A in November 2018 and found to restrict the construction of lots and roads associated with residential stages to land comprising Project Areas A1 and B. These project area boundaries fall on the development side of the boundary of the Growling Grass Frog Management Buffer (GGFMB) in all cases.

This fencing was considered effective at restricting vehicles and machinery from entering the GGFMB. Breaks in construction fencing at three locations were noted (as described previously) and these were brought to the attention of the approval holder for immediate rectification.

In the Nature Advisory December 2019 inspection, construction was not underway and construction fencing was being removed. Farm fencing was appropriately installed around all areas of retained native vegetation.

Weed management

2017/2018: Greening Australia weed management actions

Weeds across Precinct 2 were mapped by Greening Australia in August 2017 as part of their Weed Management Strategy. Weed management across Precinct 2 and including the GGFMB was then undertaken by Greening Australia between September 2017 and October 2018.

Within the GGFMB this included:

- Removal, consolidation and burning of woody weeds (African Boxthorn and Sweet Briar)
- Brush cutting of dead biomass
- Herbicide treatment of grassy and herbaceous weeds – up to eight (8) visits
- Biomass reduction burns – up to six (6) burns

In particular, the following three high-threat weeds that were found to be of greatest threat to environmental values were targeted:

- African Boxthorn (a woody weed);
- Artichoke Thistle (a herbaceous weed); and
- Serrated Tussock (a herbaceous/grassy weed).

During herbaceous weed control visits, the following additional high-threat weeds were also targeted (all but one herbaceous weeds):

- Chilean Needle Grass;
- Fennel;
- Paterson's Curse;
- Scotch Thistle;
- Spear Thistle; and
- Sweet Briar (a woody weed).

2017/2018: Greening Australia weed management outcomes

Weed survey reports from Greening Australia have been prepared for August 2017, February 2018 and June 2018 and are provided in Appendix 7 to this report. They document an overall reduction in extent and cover of the three highest threat weed species.

The monitoring inspection undertaken by BL&A in November 2018 of the GGFMB generally concur with the survey results provided by Greening Australia (with minor exceptions), as follows:

- African Boxthorn – in August 2017 found in extremely high numbers within the GGFMB; now observed to be largely eradicated – i.e. less than 1% cover;
- Artichoke Thistle – in August 2017 found in large swathes in and adjacent to the GGFMB in its northern section and at the top of the escarpment near the eastern section at up to 30% cover, including pocket outbreaks with up to 70% cover; now reduced to an overall cover of approximately 20%, with an area in the southeast section exhibiting approximately 30% cover and smaller pocket outbreaks of up to 60% cover; and
- Serrated Tussock – in August 2017 occurring within the GGFMB at cover levels of between 60–100% in all sections except for the southeast corner; now largely controlled to less than 10% cover in the northwest and reduced to 20% cover on the eastern flank of the GGFMB, it still exhibits very high cover (up to 100%) in a narrow band at the bend in the GGFMB previously described as 'the Point'.

An infestation of Fennel previously recorded in the eastern flank of the GGFBM has also been eradicated.

It is understood that ongoing weed control focused on these remaining outbreaks of Artichoke Thistle and Serrated Tussock within the GGFMB (along with the broader precinct), as well as the remaining target weeds listed above.

2019: Australian Ecosystems weed management outcomes

A weed survey report from Australian Ecosystems has been prepared in October 2019 and is provided in Appendix 6. It documents an overall reduction in extent and cover of the high threat weed species, with the exception of Artichoke Thistle which is germinating readily in areas of exposed soil due to the control of other weeds, namely Serrated Tussock and Twiggy Turnip.

Revegetation

In 2018, large-scale revegetation of the GGFMB had not yet commenced, with the exception of landscaping works associated with a drainage swale constructed within the GGFMB in its northern section. Typical sedge and rush plantings were in good health in this area, and weed cover was negligible due to effective weed-matting (see Photo 2).

It was understood that revegetation would commence within the GGFMB early in 2019.

As of December 2019, no revegetation had commenced. It is now expected to occur in autumn of 2020.

Sediment control

As outlined in the compliance reporting against Condition 2 of the Approval, appropriate sediment and erosion control fencing was observed in 2018 in conjunction with construction fencing on sections of the boundaries of construction areas that occurred on an uninterrupted upslope from Kororoit Creek.

At the three locations where one or more of the fencing panels had fallen, sediment fencing was affected and was not providing an effective barrier. These were brought to the attention of the approval holder for immediate rectification.

No stockpiles, machinery/equipment laydown or washdown areas were observed within the Growling Grass Frog Management Buffer – i.e. within 35 metres of the Kororoit Creek.

The proponent had advised that sediment/erosion control fencing installation was completed by a civil contractor by 6th October 2017. Construction commenced within Project Area A1 on 9th October 2017. (Note: Project Area B construction has now been completed and is addressed in Section 1.6).

At the time of monitoring in December 2019, sediment fencing had been removed as no construction was underway. Sediment fencing will be constructed in new works zones prior to resumption of construction works in January 2020.

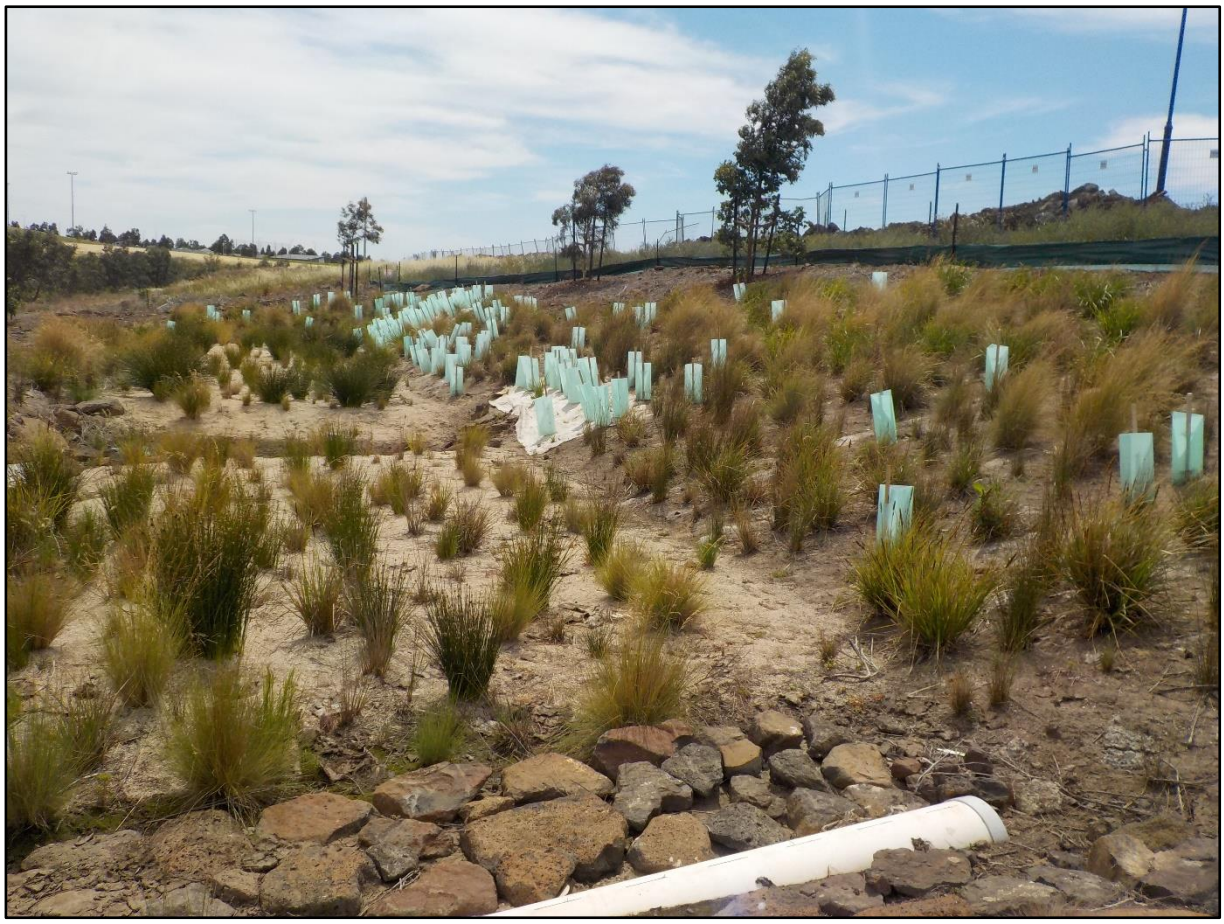

Photo 2: Revegetation works associated with a drainage swale

Works in the GGFMB

The November 2018 BL&A inspection noted the recent construction of a sewer connection and drainage outfall within the GGFMB in the northwest of the Precinct 2 project area. It was further observed that temporary construction fencing and sediment/erosion control fencing had been erected around the perimeter of these works, providing a continuous barrier between the works and the Kororoit Creek.

It was understood that revegetation of this works area would occur in early February 2019.

As of December 2019, no revegetation works have occurred. These are now expected to occur in autumn of 2020.

An area of land in the far western section of the GGFMB was observed in November 2018 to be clear of vegetation in preparation for landscaping works. It is understood that silt fencing will be installed along the margin of Kororoit Creek in this area prior to any earthworks, if required.

It was also understood that direct seeding of this area and revegetation works would commence in this area in early 2019.

As of December 2019, no revegetation works have occurred. These are now expected to occur in autumn of 2020.

Habitat and population monitoring

Pre-construction Growling Grass Frog population and habitat monitoring commenced in January 2017 during the November 2016–February 2017 breeding season. A further three annual breeding season population and habitat monitoring events were undertaken in November 2017 (one month following commencement of construction (Year 1), December 2018/January 2019 (Year 2) and November 2019 (Year 3). The reporting for these monitoring events is provided in Appendix 2 and a summary provided below.

During each monitoring event, the following was undertaken:

- A habitat assessment was conducted with photographs and habitat notes taken at three survey sites. Particular attention was paid to the presence of in-stream and fringing creek-edge vegetation; and
- Call playback and visual search surveys were conducted over two nights during appropriate weather conditions at each of the three survey sites after dusk for each monitoring event.

Growling Grass Frog was recorded at one of the three survey sites at each of the pre-construction, Year 1, Year 2 and Year 3 survey events – in a constructed stormwater wetland directly adjacent to 'Site 2'. Growling Grass Frog have not been recorded at Sites 1 and 3 during each event.

No decline in habitat quality was noted between the three monitoring events.

1.3. Condition 5 – Spiny Rice-flower impacts in Project Area A1

Condition 5 of the Approval reads:

5. The **approval holder** must ensure that the action does not impact more than eleven (11) individual **Spiny Rice-flower** plants within the combined area of **Project Areas A1** and **A2.**

As of December 2019, construction has commenced in Project Area A1 only.

A survey of Spiny Rice-flower in Project Areas A1 and A2 was undertaken by BL&A on 8th August 2016. This survey recorded a total of eleven (11) Spiny Rice-flower plants compared to the seven (7) Spiny Rice-flower previously approved for removal in these project areas. Of these previously identified plants, some were found to be still present whilst others had since died.

An application for a variation to the Approval was made by the proponent and the Approval was varied by the Department in January 2017 to allow for the removal of these eleven plants.

The eleven plants recorded in 2016 were separated spatially across the combined area of Project Areas A1 and A2 (approximately 35 hectares in area), with most occurring as isolated individuals. Given the large combined area of Project Areas A1 and A2 and the isolated nature of many of the records from August 2016 leading to a reduced likelihood of recruitment and an increased likelihood of plant attrition, it is considered unlikely that this number will have increased prior to the commencement of construction in October 2017.

No additional surveys were conducted into the status of these plants in 2019.

1.4. Condition 6 – Project Area A1 offsets secured and implemented

Condition 6 of the Approval reads:

6. The approval holder must not commence **construction activities** in **Project Area A1** until the following are met:
   a. A direct offset, consistent with the **EPBC Act Environmental Offsets Policy**, has been secured to compensate for the impacts to 6.053 hectares of **NTGVVP** and 6.053 hectares of **Striped Legless Lizard habitat**;
      i. An **offset management plan** has been prepared and submitted to the **Minister** for approval, and the **approval holder** has received written confirmation that the **offset management plan** has been approved. The approved **offset management plan** must be implemented by the **approval holder**; and
      ii. The **Department** has been provided with written confirmation and supporting evidence demonstrating that the offset has been secured.

BL&A Report 7045 (46.2) *Modeina Estate Project Area A1 EPBC Act Offset Management Plan* was approved by the Minister on 20th September 2017. Written evidence of the securing of the Karabeal offset site by way of a Section 69 Agreement under the *Conservation, Forests and Lands Act 1987* (Vic.) had been provided to the Department via email on 12th May 2017. Construction activities commenced in Project Area A1 on 9th October 2017.

The EPBC Act offsets for impacts to 6.053 hectares of *Natural Temperate Grassland of the Victorian Volcanic Plain* (NTGVVP) and 6.053 hectares of Striped Legless Lizard habitat were secured across part of a property in Karabeal in Victoria's west.

Implementation of the offset had commenced immediately following the execution of the Section 69 Agreement on 3rd April 2017. The first annual monitoring report was provided to the Victorian Department of Environment, Land, Water and Planning (DELWP) on 21st April 2018.

Work undertaken in the first year (2018) included the following actions:

- Ongoing monitoring of boundary fencing – continued to be in stock-proof condition
- Ongoing monitoring for woody weeds – little or no cover of woody weeds identified
- Quarterly monitoring for pest animals – little to no activity identified.

Works to be undertaken by the landholder in the second year (2019) included the actions outlined below.

- Ongoing monitoring of woody weeds and eradication where identified
- Control of herbaceous weeds including Toowoomba Canary Grass, Yorkshire Fog, Paspalum, Spear Thistle and South African Orchid
- Fox shooting as required
- Monitoring for rabbit warrens and removal as required
- Ecological burning as required
- Strategic grazing as required (following formal approval from DELWP for this activity – not currently included in the Management Plan for the site).

A site inspection by DELWP on 13 August 2019 (Appendix 3) determined that deeming of compliance was reliant on the meeting the following obligations:

- Woody weeds – ensure all woody weeds are cut and painted as per the Management Plan.
- Herbaceous weed control – ensure high threat weeds are controlled.
- Fencing – realign the northern boundary fence to match the site area.
- Rubbish – remove old internal fencing wire and any rubbish from the sites.

Evidence of appropriate actions taken is to be provided in a report submitted to DELWP by the end of December 2019.

The following were also noted:

- Ecological burning was recommended as an additional weed control measure.
- Burrow are to be monitored to determine the species responsible and eradication action taken if resulting from pest presence.

No evidence of Red Fox was found.

1.5. Condition 6A – Project Area A2 offsets secured

Condition 6A of the Approval reads:

6A. The approval holder must not commence **construction activities** in **Project Area A2** until either 6A(a) or 6A(b) are met:

a. A direct offset, consistent with the **EPBC Act Environmental Offsets Policy**, has been secured to compensate for the impacts to 4.277 hectares of **NTGVVP** and 4.277 hectares of **Striped Legless Lizard habitat**;

i. An **offset management plan** has been prepared and submitted to the **Minister** for approval, and the **approval holder** has received written confirmation that the **offset management plan** has been approved. The approved **offset management plan** must be implemented by the **approval holder**; and

ii. The **Department** has been provided with written confirmation and supporting evidence demonstrating that the offset has been secured;

OR

b. In a manner consistent with the **Melbourne Urban Development Policy**, secure an offset for impacts to 4.277 hectares of **NTGVVP** and 4.277 hectares of **Striped Legless Lizard habitat** associated with **Project Area A2**. Documentary evidence that the offset has been secured must be provided to the **Department** with 14 days of being secured.

Condition 6A compliance

No construction in Project Area A2

The Nature Advisory December 2019 site inspection determined that no construction had commenced in Project Area A2 .

Construction fencing or farm fencing was found to be effective in restricting personnel and machinery from entering areas containing MNES in Project Area A2. The vast majority of the construction fencing throughout Precinct 2 was in good condition (see Section 1.1).

No construction is currently taking place, and DFC are currently in the process of removing construction fencing and farm fencing has been erected around all mapped areas on MNES in Project Area A2, with no resultant damages to these matters observed.

MUD Policy payment

The proponent has made payment under the Melbourne Urban Development Policy for offsets under the MUD Policy to compensate for the impacts to 4.277 hectares of NTGVVP and 4.277 hectares of Striped Legless Lizard habitat. Proof of this payment has been provided to the Department.

1.6. Conditions 7 & 8 – Project Area B offsets secured and implemented

Conditions 7 and 8 of the Approval read:

7. The **approval holder** must not commence **construction activities** in **Project Area B** until either 7(a) or 7(b) are met:
    a. A direct offset containing a minimum of 100 **Spiny Rice-flower** plants has been secured;
        i. An **offset management plan** has been prepared and submitted to the **Minister** for approval, and the **approval holder** has received written confirmation that the **offset management plan** has been approved. The approved **offset management plan** must be implemented by the **approval holder**; and
        ii. The **Department** has been provided with written confirmation and supporting evidence that demonstrate the offset has been secured.
    b. The **Minister** agrees in writing that condition 15 (a–e) has been satisfied.

8. The **approval holder** must not commence **construction activities** in **Project Area B** until the following are met:
    c. A direct offset, consistent with the **EPBC Act Environmental Offsets Policy**, has been secured to compensate for the impacts to 1.824 hectares of **NTGVVP** and 1.824 hectares of **Striped Legless Lizard habitat**;
        i. An **offset management plan** has been prepared and submitted to the **Minister** for approval, and the **approval holder** has received written confirmation that the **offset management plan** has been approved. The approved **offset management plan** must be implemented by the **approval holder**; and
        ii. The **Department** has been provided with written confirmation and supporting evidence that demonstrate the offset has been secured.

Conditions 7 & 8 compliance

BL&A Report 7045 (35.4) *Modeina Estate Precinct 2 – Project Area B (School Site) EPBC Act Offset Management Plan* was approved by the Minister on 7th March 2017 and written evidence

of the securing of two offset sites (Campbelltown and Karabeal) by way of a Section 69 Agreement under the *Conservation, Forests and Lands Act 1987* (Vic.) provided to the Department via email on 12th May 2017. Native vegetation removal and construction of the school site within Project Area B was undertaken in January 2018.

The EPBC Act direct offset of 100 Spiny Rice-flower was secured on the Campbelltown offset site in Victoria's west; the direct offset for impacts to 1.824 hectares of *Natural Temperate Grassland of the Victorian Volcanic Plain* (NTGVVP) and 1.824 hectares of Striped Legless Lizard habitat were secured across part of the Karabeal property.

Implementation of the offset across both sites had commenced immediately following the execution of the Section 69 Agreements on 3rd April 2017. The first annual monitoring report was provided to the Victorian Department of Environment, Land, Water and Planning (DELWP) on 21st April 2018.

Work undertaken by the landholder in the first year included the actions outlined below.

Campbelltown

- Fencing of individual offset sites within the broader property by July 2017
- Limited eradication of woody weeds in Spring and Autumn 2017
- Fox shooting undertaken

Karabeal

- Ongoing monitoring of boundary fencing – continued to be in stock-proof condition
- Ongoing monitoring for woody weeds – little or no cover of woody weeds identified
- Quarterly monitoring for pest animals – little to no activity identified

Work to be undertaken by the landholder in the second year included the actions outlined below.

Campbelltown

- Ongoing eradication of woody weeds
- Control of herbaceous weeds including Toowoomba Canary Grass, Spear Thistle and St John's Wort
- Fox shooting as required
- Monitoring for rabbit warrens and removal as required
- Strategic grazing as required
- Ecological burning as required

Karabeal

- Ongoing monitoring of woody weeds and eradication where identified

- Control of herbaceous weeds including Toowoomba Canary Grass, Yorkshire Fog, Paspalum, Spear Thistle and South African Orchid
- Fox shooting as required
- Monitoring for rabbit warrens and removal as required
- Ecological burning as required
- Strategic grazing as required (following formal approval from DELWP for this activity – not currently included in the Management Plan for the site).

Work undertaken by the landholder in the third year included the actions outlined below.

Campbelltown

- Fumigation and collapsing of burrow of European Rabbit recorded just outside the site's southern boundary.
- Control of all woody weeds including Sweet Briar regrowth and Plum and remove all fruits and cut branches.
- Control of herbaceous weeds including Toowoomba Canary Grass, St John's Wort, Bulbous Meadow-grass, Cat's Ear, Cock'sfoot, Spear Thistle, Ribwort, Dock and Brown-top Bent.
- Remove wire from internal fencing.
- Monitoring for any impacts to growth of seeding of native grasses by kangaroos and control if required.
- Strategic grazing as required.
- Ecological burning as required.

Karabeal

- Re-align fencing to the east to match site area.
- Remove unused fencing, wire and old iron.
- Remove internal fencing unless pulse grazing is to be implemented.
- Monitor small burrow to determine species responsible and control if required.
- Control of all woody weeds including Boxthorn and non-indigenous species including Blue Gum, Spotted Gum Cypress and Ash.
- Introduce higher level of weed control than originally prescribed in the Management Plan, incorporating spot spraying and burning and consider addition of strategic pulse grazing to reduce weed cover.
- Liaise with local CMA to control erosion along drainage line and continue to monitor for any increase.
- Assign names to paddock to allow for greater clarity of management action requirements and accuracy of specific practices.

Annual monitoring reports conducted by DELWP are provided for Cambelltown and Karabeal are provided in Appendix 3 and 4 respectively.

1.7. Conditions 13, 14, 16 & 17 – no construction activities in Project Areas C1, C2 & D

Conditions 13, 14, 16 and 17 of the Approval read (in part, paraphrased):

13. The **approval holder** must not commence **construction activities** in **Project Area C2** until… [direct offsets are secured for impacts to NTGVVP, Striped Legless Lizard habitat and Spiny Rice-flower].
14. The **approval holder** must not undertake **construction activities** within the Grassland Reserve, to be located in **Project Area B** as per Appendix B.

16. The **approval holder** must not commence **construction activities** in **Project Area D** until… [a direct offset is secured for impacts to NTGVVP, Striped Legless Lizard habitat].
17. If condition 15 (a–d) cannot be met in full:
    a. the **approval holder** must not commence **construction activities** within **Project Area D**; until the following are met:
        i. Adequately compensate for impacts to **Spiny Rice-flower** plants located within **Project Area D** with an alternative offset. This offset strategy must be prepared following consultation with the **Department**; and
        ii. The **Minister** has provided written notification to the **approval holder** that conditions 14 and 15 no longer apply.

Conditions 13, 14 & 16 compliance

Offsets secured for Project Areas C1, C2 & D

The Nature Advisory December 2019 site inspection determined that no construction had commenced in Project Areas C1, C2 and D (including the Grassland Reserve).

The perimeter of the Grassland Reserve was fenced with a farm-type post and wire fence in February 2017. The December 2019 site inspection found that this fencing is intact, with access into the reserve available via a farm gate in the south east corner. However, the fence was lacking 'NO GO ZONE' signs affixed at 30-metre intervals, as required under the Grassland Reserve Management Plan. DFC have been informed and advised that this will be rectified immediately. It is recommended that chicken wire or similar should be attached to the gate to prevent the potential entry of rabbits through or under the gate. Beyond this, no fence maintenance is currently required.

As no construction is currently underway, construction fencing is being removed and will be re-instated when construction resumes in January 2020.

Condition 17 compliance

Alternative offset

BL&A Report 7045 (51.4) *Modeina Precinct 2 – Spiny Rice-Flower Alternative Offset Strategy* was approved by the Minister on 9th November 2018.

Project Areas C1, C2 & D Offset Management Plan

BL&A Report 7045 (55.2) *Modeina Precinct 2, Project Areas C1, C2 & D – Cressy Offset Management Plan* was approved by the Minister on 9th November 2018.

Implementation of the offset had commenced immediately following the execution of the TFN Covenant on 20th March 2019 (Appendix 8). The first annual monitoring report will be due for provision to the Victorian Department of Environment, Land, Water and Planning (DELWP) on 21st April 2020.

Construction may now commence in Project Areas C1, C2 & D.

Evidence that Condition 15 no longer applies

Written notification that Condition 15 no longer applies was provided by the Department by email on 28th November 2018 (Appendix 5).

1.8. Condition 14A – Grassland Reserve Management Plan

Condition 14A of the Approval reads:

> 14A. The **approval holder** must, in consultation with a **suitably qualified ecologist**, develop a **Grassland Reserve Management Plan** for the protection and management of **protected matters** within the **Grassland Reserve**. The **Grassland Reserve Management Plan** must be submitted to the **Minister** for approval 6 months prior to the commencement of **construction activities** within 100 metres of **Project Area D**. The approved **Grassland Reserve Management Plan** must be implemented.
>
> The **Grassland Reserve Management Plan** must:
>
> a. include existing baseline data and other supporting evidence that documents the baseline conditions of **protected matters** within the **Grassland Reserve**;
>
> b. outline specific management actions to protect and maintain **protected matters** within the **Grassland Reserve**; and
>
> c. outline annual monitoring and reporting on the condition of **protected matters** within the **Grassland Reserve** for a period of 10 years from the commencement of the Plan.

Condition 14A compliance

BL&A Report 7045 (43.4) *Modeina Estate, Burnside – Grassland Reserve Management Plan* was submitted to the Minister for approval on 8th May 2018 and was approved by the Minister on 9th November 2018 and is available for viewing on the proponent's website at https://www.denniscorp.com.au/about-dennis-family/initiatives-and-awards/sustainability/. Construction activities were found not to have occurred within 100 metres of either Project Area D or the Grassland Reserve during the December 2019 Nature Advisory inspection.

This compliance reporting is made against the construction phase management and monitoring actions outlined in Appendix 4 of the GRMP. These actions and the relevant section of the GRMP are listed below under the three core requirements of the Plan outlined in Condition 14A:

- Baseline data – Condition 14A (a) (GRMP Section 3.4.1)
- Construction and 10-year management actions – Condition 14A (b) (GRMP Sections 3.3 & 3.4)
- Monitoring and reporting – Condition 14A (c) (GRMP Section 3.5)

Vegetation overview

Baseline data

Baseline data on the condition, overall weed cover and individual high-threat weed covers was collected during the November 2018 BL&A site inspection.

As of November 2018, the Grassland Reserve was considered to comprise the following:

- 65% cover of native flora;
- 20% cover of introduced flora (weeds); and
- 15% cover of organic matter (leaf litter) and inter-tussock spaces.

Monitoring and reporting – Year 2

Year 2 assessment on the condition, overall weed cover and individual high-threat weed covers was collected during the December 2019 Nature Advisory site inspection.

As of December 2019, the Grassland Reserve was considered to comprise the following:

- 70% cover of native flora;
- 15% cover of introduced flora (weeds); and
- 15% cover of organic matter (leaf litter) and inter-tussock spaces.

A 5% increase in cover of native flora and consequently a 5% reduction in introduced species cover has been recorded since the previous monitoring report in November 2018.

Kangaroo Grass was the dominant grass species in the reserve. While grassy cover was high, a suitable amount of inter-tussock space was present allowing for a diversity of other native flora to occur including Spiny Rice-flower (*Pimelea spinescens subsp. spinescens*), Pink Bindweed (*Convolvulus sp.*), Common Fireweed (*Senecio quadridentatus*), Black Cottonbush (*Maireana decalvans*), Kidney Weed (*Dichondra repens*), Black-anther Flax-lily (*Dianella revoluta*) and Narrow Plantain (*Plantago gaudichaudii*).

Arching Flax-lily (*Dianella longifolia var. grandis*), listed as vulnerable on the DELWP Advisory List of Threatened Plants in Victoria (DELWP Advisory list) was known to occur in the reserve, and was still present during the December 2019 monitoring.

Fragrant Saltbush (*Rhagodia parabolica*), listed as rare on the DELWP Advisory List, was also re-recorded in the reserve during the most recent visit.

A reduction in cover of Wild Oat from 12% to 6% is likely attributed to well-timed and managed environmental burns, reducing the biomass before the grass sets seed, creating inter-tussock space for a suite of native species to recruit. This is also likely the reason for the emergence of new weeds such as Galenia, Onion Grass and Delicate Hair-grass, and the increase in cover of other weed species such as Squirrel-tail Fescue and Large Quaking Grass.

Selective herbicide control has seen the reduction and potential eradication of a range of exotic species, namely; Serrated Tussock, Artichoke Thistle, Ox-tongue and Big Heron's-bill.

An estimate of cover for weed species in the grassland reserve is presented in Table 1.

Table 1: Weed cover estimates – Grassland Reserve

Common name	Species name	2018 Cover estimate	2019 Cover estimates	Notes
African Box-thorn	*Lycium ferocissimum*	<1%	<1%	Small emergent plants recorded
Artichoke Thistle	*Cynara cardunculus* subsp. *flavescens*	<1%	0%	Not observed
Chilean Needle-grass	*Nassella neesiana*	<1%	0%	Not observed
Wild Oat	*Avena* sp.	12%	6%	Dominant in disturbed section of grassland reserve
Ox-tongue	*Helminthotheca echioides*	<1%	0%	Not observed
Ribwort	*Plantago lanceolata*	3%	1%	Sporadic throughout
Serrated Tussock	*Nassella trichotoma*	<1%	0%	Not observed
Twiggy Turnip	*Brassica fruticulosa*	<1%	<1%	One or two recruiting individuals
Squirrel-tail Fescue	*Vulpia bromoides*	1%	2%	Common throughout
Large Quaking Grass	*Briza maxima*	2%	3%	Common through the centre of the reserve
Pimpernel	*Lysimachia arvensis*	<1%	<1%	Sparse; few plants recorded
Big Heron's-bill	*Erodium botrys*	<1%	0%	Not observed
Red Brome	*Bromus rubens*	<1%	0%	Not observed
Rye Grass	*Lolium* sp.	1%	<1%	Scattered occurrence
Narrow-leaved Clover	*Trifolium angustifolium*	<1%	<1%	Sparse; few plants recorded

Common name	Species name	2018 Cover estimate	2019 Cover estimates	Notes
Galenia	*Galenia pubescens* var. *pubescens*	0%	<1%	One plant recorded towards the centre of the reserve
Onion Grass	*Romulea rosea*	0%	2	Recorded throughout
Delicate Hair-grass	*Aira elegantissima*	0%	<1%	Sporadically recorded in open areas

Weeds in the Grassland Reserve that have a cover of >1% are highlighted in grey.

Spiny Rice-flower

Baseline data

Several Spiny Rice-flower (SRF) plants occur within the Grassland Reserve. As per the ongoing research being undertaken in this area by Debbie Reynolds, some plants are in cages. All SRF plants recorded during an updated targeted survey of the reserve in 2016 were tagged with metal tags/rings and have unique identification numbers.

During the November 2018 monitoring, 29 SRF plants were selected at random and notes were recorded on their status and health. Of the 29 SRF plants assessed, 25 were in good health, while two were reduced to a mass of woody stems, and the remaining two were reduced to dead material above ground.

In addition to the 29 tagged plants assessed, six SRF recruits (small plants without tags) were recorded in the north west of the reserve. These six plants are expected to be new plants that have recruited following recent biomass control burns in the reserve.

Monitoring and reporting – Year 2

179 Spiny Rice-flowers (SRF) have been recorded within the Grassland Reserve during a detailed targeted survey in 2016. All SRFs were tagged with metal tags/rings and have unique identification numbers.

During the December 2019 monitoring, all SRF plants were attempted to be located and notes were recorded on their status and health. Of the 179 SRFs assessed, 162 were re-recorded in good health (as evidenced in Photos 3 & 4), while seven were not found, and the remaining ten, only the tags were found with no plants observed. It can be assumed that these plants are either dormant or dead.

In addition to the tagged plants, 35 new SRF plants were recorded (plants without tags) throughout the reserve. Of these 35 plants, seven of them may be the remaining tagged plants which were not found, while the remaining 28 plants are small and likely to be new recruits that have emerged following management of biomass through ecological burns and weed control.

Photos 3 and 4: Healthy Spiny Rice-flowers in Grassland Reserve, regenerating after the ecological burn (left and right)

Biomass

Baseline data

Biomass levels in the Grassland Reserve differed based on recent burning in particular sections of the reserve. In areas of the reserve that had been recently burned, biomass was low, with large inter-tussock spaces between the dominant Kangaroo Grass. In the areas not subject to recent burning, biomass levels were high, with limited space between tussocks.

Monitoring and reporting – Year 2

Biomass levels in the Grassland Reserve differed based on recent burning in particular sections of the reserve. In the eastern half of the reserve that had been recently burnt, biomass was low, with large inter-tussock spaces between the dominant Kangaroo Grass (Photo 5). In areas where grass had been slashed, biomass was high (Photo 6). In the areas not subject to recent burning or slashing, biomass levels were moderate, with more limited space between tussocks. An overall assessment of the organic litter cover was estimated at 20%.

Evidence of pest animals

Baseline data

No evidence of pest animals was recorded in the grassland reserve.

Monitoring and reporting – Year 2

No evidence of pest animals was recorded in the grassland reserve. As such, no pest animal control is currently required.

Photo 5 (Left): Burnt area with large inter-tussock spaces between Kangaroo Grass.

Photo 6 (Right): High biomass of slashed Wild Oat in the south of the reserve.

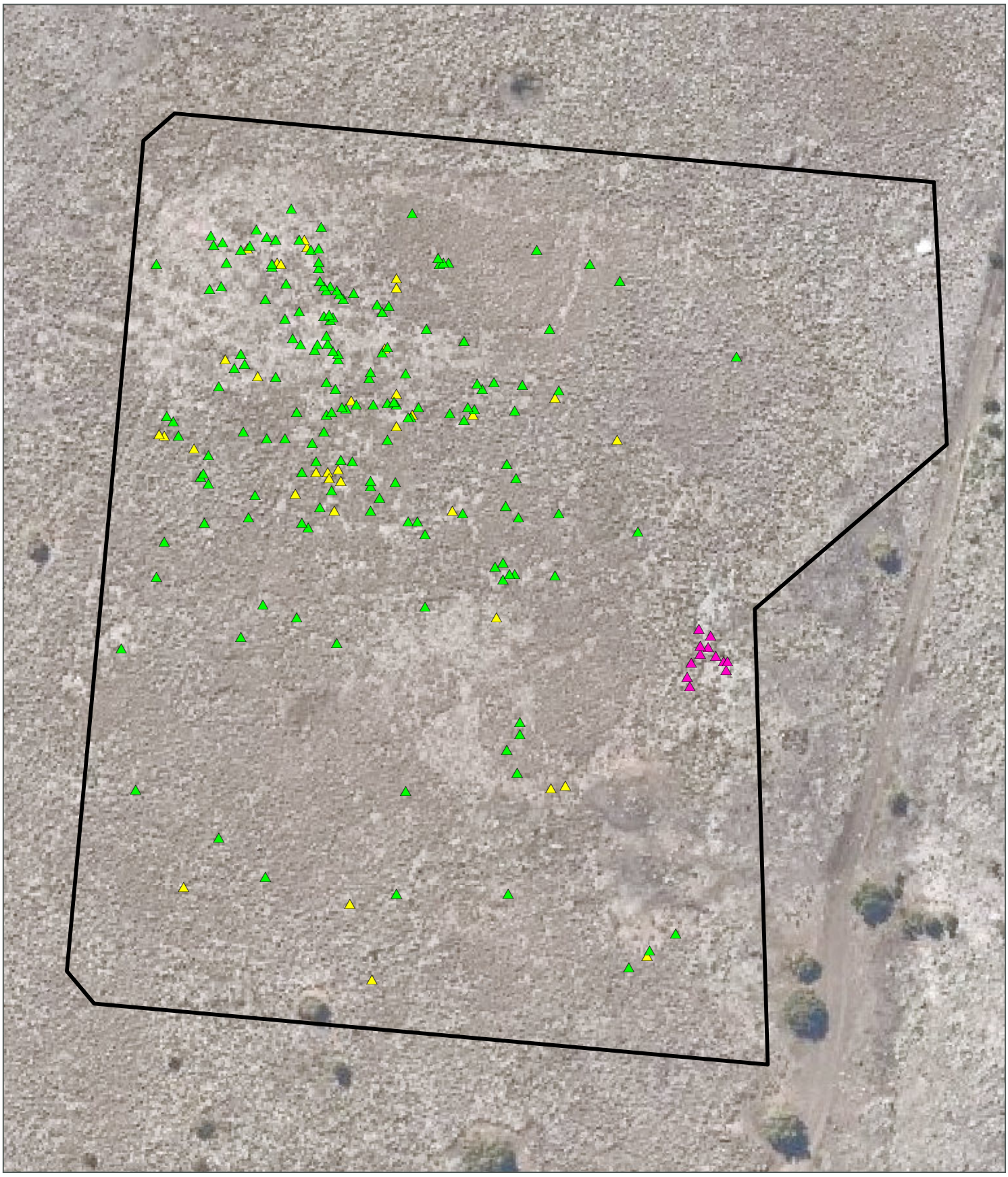

Figure 1:

Project: Grassland Reserve Monitoring **Client**: Dennis Family Corporation **Date**: 13/12/2019

Grassland Reserve (UDAX)
- Re-recorded SRF (162)
- Additional (35)
- Translocated (12)

N

Metres
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Construction and 10-year management actions

Integrity of fencing

At the time of the December 2019 monitoring, fencing around the entire perimeter of the Grassland Reserve was intact, with access into the reserve available via a farm gate in the south east corner. The type of fencing used seems to have been effective in limiting access by grazers, as no scats or other signs of access by kangaroos or rabbits was noted inside the reserve.

The fencing was lacking 'NO GO ZONE' signs affixed at 30-metre intervals, as required under the Grassland Reserve Management Plan. This must be rectified as soon as possible. It is recommended that chicken wire or similar should be attached to the gate to prevent the potential entry of rabbits through or under the gate. Beyond this, no fence maintenance is currently required.

Photo 7: Fencing around the perimeter of the grassland reserve

Sediment and surface water control

During the December 2019 compliance monitoring inspection undertaken by Nature Advisory, no construction was underway and the sediment fencing installed in 2018 was being dismantled. Sediment fencing must be installed prior to the resumption of construction activities.

Weed control

Weed control actions in 2019 have been undertaken in the Grassland Reserve by Australian Ecosystems, the results of which are summarised here and presented in the report in Appendix 6.

In particular, the three most prolific high-threat weeds identified in the GRMP have been drastically reduced in cover from the data collected in January 2017, as described below and detailed in Table 1.

- African Boxthorn:
  - January 2017 (GRMP) – a number of large individuals near the eastern boundary
  - November 2018 – no mature individuals observed
  - December 2019 – no mature individuals observed, small emergent plants recorded
- Artichoke Thistle:
  - January 2017 (GRMP) – an infestation recorded in northern section
  - November 2018 – less than 1% cover with only a small number of recruits
  - December 2019 – no individuals observed
- Serrated Tussock:
  - January 2017 (GRMP) – large infestations and spreading
  - November 2018 – less than 1% cover with only a small number of individuals
  - December 2019 – no individuals observed

Weed outbreaks previously recorded adjacent to the grassland reserve were controlled as follows:

- Fennel:
  - January 2017 (GRMP) – a large infestation of Fennel occurred immediately to the east of the reserve boundary, on the eastern side of the existing dirt track
  - November 2018 – infestation eradicated
  - December 2019 – evidence of individuals recently sprayed

Revegetation

Revegetation works are not required to occur in the Grassland Reserve.

Landscape planting

Adjacent landscape plantings have not yet commenced. These will be reported on in future compliance reports.

1.9. Conditions 18, 19, 21 & 26

Conditions 18, 19, 21 & 26 read as follows:

18. The **approval holder** must ensure that **offset attributes** and **shapefiles** for all offset sites are provided to the **Department** at the timing of submitting their corresponding **offset management plan**.

19. Within 30 days after the commencement of **construction activities**, the **approval holder** must advise the **Minister** in writing of the actual date of commencement of **construction activities**.

21. Within three months of every 12 month anniversary of the commencement of **construction activities**, the **approval holder** must publish a report on its website addressing compliance with each of the conditions of this approval, including implementation of any management plans as specified in the conditions. Documentary evidence providing proof of the date of publication and non-compliance with any of the conditions of this approval must be provided to the **Department** at the same time as the compliance report is published. Compliance reports must remain on the approval holder's website for 12 months from the date of publishing. The requirement to submit compliance reports will cease following written agreement with the **Minister**.

26. Unless otherwise agreed to in writing by the **Minister**, the **approval holder** must publish all management plans referred to in these conditions of approval on the approval holder's website. Each management plan must be published on the website within 1 month of being approved. The **approval holder** must notify the **Department** within 5 days of publishing the plan on the website. The management plans must remain on the website for the period this approval has effect.

Condition 18 compliance

Shapefiles and offset attributes of the following have been provided to the Department corresponding with the submission of each offset plan:

- Karabeal offset site – corresponding to the Project Area B Offset Management Plan (OMP) and the Project Area A1 OMP;
- Campbelltown offset site – corresponding to the Project Area B OMP; and
- Cressy offset site – corresponding to the Project Areas C1, C2 & D OMP.

Condition 19 compliance

The proponent advised the Minister in writing within 30 days of the commencement of construction, commencing 9th October 2017. Evidence of this is provided in Appendix 6.

Condition 21 compliance

As required in the written advice from the Department (Appendix 6) this Compliance Report is to be published on the approval holder's website before 9th January 2020.

Condition 26 compliance

All management plans relating to construction activities that have commenced are published on the approval holder's website at https://www.denniscorp.com.au/about-dennis-family/initiatives-and-awards/sustainability.

End of Year 2 Compliance Report

Appendix 1: Approval 2011/6063 – Consolidated Variation Notice dated 9/11/2018

Australian Government

Department of the Environment and Energy

VARIATION OF CONDITIONS ATTACHED TO APPROVAL
Burnside Development – The Point, Victoria (EPBC 2011/6063)

This decision to vary conditions of approval is made under section 143 of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

Approved action

Person to whom the approval is granted	DFC (Project Management) Pty Ltd ABN: 83 161 448 139
Approved action	To develop Modeina Estate Precinct 2, a residential housing development in the Melbourne suburb of Burnside, Victoria [see EPBC Act referral 2011/6063 and variation to proposal dated 26 March 2015].

Variation

Variation of conditions attached to approval	The variations are: Revoke conditions 9, 10, 11 and 12. Delete conditions 13, 14, 15, 16,17 and Appendix A attached to the approval dated 20 July 2015 and substitute with the conditions specified below. Add Appendix B, condition 14A and definitions for 'Grassland Reserve' and 'Grassland Reserve Management Plan' as specified below.
Date of effect	This variation has effect on the date the instrument is signed

Person authorised to make decision

Name and position	Greg Manning Assistant Secretary Assessments (WA, SA, NT) & Post Approvals Branch
Signature	
Date of decision	9/11/18

Date of decision	Conditions attached to approval
Original approval dated 20/07/2015	To minimise impacts of the action on listed threatened species and ecological communities: 1. The **approval holder** must ensure that **construction activities** do not occur outside of the **project area** as illustrated at Appendix A.
Original approval dated 20/07/2015	2. The **approval holder** must implement sediment and erosion control measures consistent with **best practice pollution, sediment and erosion control guideline(s)** for the duration of **construction activities**.
Original approval dated 20/07/2015	3. The **approval holder** must prepare a site specific **Growling Grass Frog** Management Plan; which is required to be consistent with **best practice Growling Grass Frog management guidelines**. The plan must outline how significant impacts to **Growling Grass Frogs** will be avoided or mitigated and as a minimum must include: a. Management measures demonstrating how the **Growling Grass Frog buffer zone** will be demarcated to minimise vehicle access; b. Details of revegetation, **environmental weed** control measures and other management activities within the **Growling Grass Frog buffer zone**; c. Details of any **construction activities** and management measures to avoid **significant impacts** during construction; and d. Measures to ensure any on-site personnel will be informed of their obligations under the **Growling Grass Frog** Management Plan.
Variation dated 04/08/2017	4. **Construction activities** must not commence in **Project Areas A1, A2, C1, C2** and **D** until the site specific **Growing Grass Frog** Management Plan has been approved by the **Minister** in writing. Construction in **Project Area B** can proceed prior to approval of the site-specific **Growing Grass Frog** Management Plan must be implemented.
Variation dated 04/08/2017	*Project Area A1 and A2* 5. The **approval holder** must ensure that the action does not impact more than eleven (11) individual **Spiny Rice-flower** plants within the combined area of **Project Areas A1** and **A2.**
Variation dated 04/08/2017	6. The approval holder must not commence **construction activities** in **Project Area A1** until the following are met: a. A direct offset, consistent with the **EPBC Act Environmental Offsets Policy**, has been secured to compensate for the impacts to 6.053 hectares of **NTGVVP** and 6.053 hectares of **Striped Legless Lizard habitat**; i. An **offset management plan** has been prepared and submitted to the **Minister** for approval, and the **approval holder** has received written confirmation that the **offset management plan** has been approved. The approved **offset management plan** must be implemented by the **approval holder**; and ii. The **Department** has been provided with written confirmation and supporting evidence demonstrating that the offset has been secured.
Variation dated 04/08/2017	6A. The approval holder must not commence **construction activities** in **Project Area A2** until either 6A(a) or 6A(b) are met: a. A direct offset, consistent with the **EPBC Act Environmental Offsets Policy**, has been secured to compensate for the impacts to

Date of decision	Conditions attached to approval
	4.277 hectares of **NTGVVP** and 4.277 hectares of **Striped Legless Lizard habitat**; i. An **offset management plan** has been prepared and submitted to the **Minister** for approval, and the **approval holder** has received written confirmation that the **offset management plan** has been approved. The approved **offset management plan** must be implemented by the **approval holder**; and ii. The **Department** has been provided with written confirmation and supporting evidence demonstrating that the offset has been secured; OR b. In a manner consistent with the **Melbourne Urban Development Policy**, secure an offset for impacts to 4.277 hectares of **NTGVVP** and 4.277 hectares of **Striped Legless Lizard habitat** associated with **Project Area A2**. Documentary evidence that the offset has been secured must be provided to the **Department** with 14 days of being secured.
Variation dated 04/08/2017	*Project Area B* 7. The **approval holder** must not commence **construction activities** in **Project Area B** until either 7(a) or 7(b) are met: a. A direct offset containing a minimum of 100 **Spiny Rice-flower** plants has been secured; i. An **offset management plan** has been prepared and submitted to the **Minister** for approval, and the **approval holder** has received written confirmation that the **offset management plan** has been approved. The approved **offset management plan** must be implemented by the **approval holder**; and ii. The **Department** has been provided with written confirmation and supporting evidence that demonstrate the offset has been secured; OR b. The **Minister** agrees in writing that condition 15 (a–e) has been satisfied.
Variation dated 04/08/2017	8. The **approval holder** must not commence **construction activities** in **Project Area B** until the following are met: a. A direct offset, consistent with the **EPBC Act Environmental Offsets Policy**, has been secured to compensate for the impacts to 1.824 hectares of **NTGVVP** and 1.824 hectares of **Striped Legless Lizard habitat**; i. An **offset management plan** has been prepared and submitted to the **Minister** for approval, and the **approval holder** has received written confirmation that the **offset management plan** has been approved. The approved **offset management plan** must be implemented by the **approval holder**; and ii. The **Department** has been provided with written confirmation and supporting evidence that demonstrate the offset has been secured.
As varied on the date this instrument was signed	9. Revoked
As varied on the date this instrument was signed	10. Revoked

Date of decision	Conditions attached to approval
As varied on the date this instrument was signed	11. Revoked
As varied on the date this instrument was signed	12. Revoked
As varied on the date this instrument was signed	*Project Area C1, C2 and D* 13. The **approval holder** must not commence **construction activities** in **Project Area C2** until the following are met. a. A direct offset, consistent with the **EPBC Act Environmental Offsets Policy**, has been secured to compensate for the impacts to 3.283 hectares of **NTGVVP** and 3.283 hectares of **Striped Legless Lizard habitat**; i. An **offset management plan** has been prepared and submitted to the **Minister** for approval, and the **approval holder** has received written confirmation that the **offset management plan** has been approved. The approved **offset management plan** must be implemented by the **approval holder**; and ii. The **Department** has been provided with written confirmation and supporting evidence that demonstrate the offset has been secured. b. A direct offset is secured containing a minimum of 60 **Spiny Rice-flower** plants. An **offset management plan** must be prepared and submitted to the **Minister** for approval. The approved **offset management plan** must then be implemented by the **approval holder**.
As varied on the date this instrument was signed	14. The **approval holder** must not undertake construction activities within the **Grassland Reserve**, to be located in **Project Area D** as per Appendix B.
As added on the date this instrument was signed	14A. The **approval holder** must, in consultation with a **suitably qualified ecologist**, develop a **Grassland Reserve Management Plan** for the protection and management of **protected matters** within the **Grassland Reserve**. The **Grassland Reserve Management Plan** must be submitted to the **Minister** for approval 6 months prior to the commencement of **construction activities** within 100 metres of **Project Area D**. The approved **Grassland Reserve Management Plan** must be implemented. The **Grassland Reserve Management Plan** must: a. include existing baseline data and other supporting evidence that documents the baseline conditions of **protected matters** within the **Grassland Reserve**; b. outline specific management actions to protect and maintain **protected matters** within the **Grassland Reserve** ; and c. outline annual monitoring and reporting on the condition of **protected matters** within the **Grassland Reserve** for a period of 10 years from commencement of the Plan.
As varied on the date this instrument was signed	15. The **approval holder** must not commence **construction activities** within **Project Area D and Project Area C1** until the **Minister** agrees in writing that the following are met: a. A **suitably qualified ecologist** has confirmed in writing that each transplant site is demonstrating recruitment by propagated plants;

Date of decision	Conditions attached to approval
	b. A **suitably qualified ecologist** has prepared a report to peer review the results of the **Spiny Rice-flower Propagation Project**; c. The **approval holder** has submitted the peer review report to the **Minister** for review; and d. The **Minister** has reviewed the report and determined it demonstrates the **Spiny Rice-flower Propagation Project** has resulted in a **viable and self sustaining Spiny Rice-flower** population at each transplant recipient site, and supports the **target number** of **established Spiny Rice-flower** plants across the sites; Note: Condition 15e was revoked on the date this instrument was signed.
As varied on the date this instrument was signed	16. The **approval holder** must not commence **construction activities** in **Project Area D** until the following are met. a. A direct offset, consistent with the **EPBC Act Environmental Offsets Policy**, has been secured to compensate for the impacts to 3.963 hectares of **NTGVVP** and 3.963 hectares of Striped Legless Lizard habitat; i. An **offset management plan** has been prepared and submitted to the **Minister** for approval, and the **approval holder** has received written confirmation that the **offset management plan** has been approved. The approved **offset management plan** must be implemented by the **approval holder**; and ii. The **Department** has been provided with written confirmation and supporting evidence that demonstrate the offset has been secured. b. Condition 15 has been satisfied.
As varied on the date this instrument was signed	17. If condition 15 (a–d) cannot be met in full: a. the **approval holder** must not commence **construction activities** within **Project Area D** and **Project Area C1**; until the following are met: i. Adequately compensate for impacts to **Spiny Rice-flower** plants located within **Project Area D** and **Project Area C1** with an alternative offset. This offset strategy must be prepared following consultation with the **Department**; and ii. The **Minister** has provided written notification to the **approval holder** that condition 15 no longer applies Note: Condition 17b was revoked on the date this instrument was signed.
Original approval dated 20/07/2015	*Administrative Conditions* 18. The **approval holder** must ensure that **offset attributes** and **shapefiles** for all offset sites are provided to the **Department** at the timing of submitting their corresponding **offset management plan**.
Original approval dated 20/07/2015	19. Within 30 days after the commencement of **construction activities**, the **approval holder** must advise the **Minister** in writing of the actual date of commencement of **construction activities**.
Original approval	20. The **approval holder** must maintain accurate records substantiating all activities associated with or relevant to the conditions of approval,

Date of decision	Conditions attached to approval
dated 20/07/2015	including measures taken to implement the management plans, and make them available upon request to the **Department**. Such records may be subject to audit by the **Department** or an independent auditor in accordance with section 458 of the **EPBC Act**, or used to verify compliance with the conditions of approval. Summaries of audits will be posted on the **Department's** website. The results of audits may also be publicised through the general media.
Original approval dated 20/07/2015	21. Within three months of every 12 month anniversary of the commencement of **construction activities**, the **approval holder** must publish a report on its website addressing compliance with each of the conditions of this approval, including implementation of any management plans as specified in the conditions. Documentary evidence providing proof of the date of publication and non-compliance with any of the conditions of this approval must be provided to the **Department** at the same time as the compliance report is published. Compliance reports must remain on the approval holder's website for 12 months from the date of publishing. The requirement to submit compliance reports will cease following written agreement with the **Minister**.
Original approval dated 20/07/2015	22. Upon the direction of the **Minister**, the **approval holder** must ensure that an independent audit of compliance with the conditions of approval is conducted and a report submitted to the **Minister**. The independent auditor must be approved by the **Minister** prior to the commencement of the audit. Audit criteria must be agreed to by the **Minister** and the audit report must address the criteria to the satisfaction of the **Minister**.
Variation dated 04/08/2017	23. If the **approval holder** wishes to carry out any activity otherwise than in accordance with management plans as specified in the conditions, the **approval holder** must submit to the **Department** for the **Minister's** written approval a revised version of that management plan. The varied activity shall not commence until the **Minister** has approved the revised management plan in writing. The **Minister** will not approve a revised management plan unless the revised management plan will result in an equivalent or improved environmental outcome over time. If the **Minister** approves the revised management plan, then it must be implemented in place of the management plan originally approved.
Original approval dated 20/07/2015	24. If the **Minister** believes that it is necessary or convenient for the better protection of listed threatened species and ecological communities to do so, the **Minister** may request that the **approval holder** make specified revisions to the management plans specified in the conditions and submit the revised management plan for the **Minister's** written approval. The **approval holder** must comply with any such request. The revised approved management plans must be implemented. Unless the **Minister** has approved the revised management plans then the **approval holder** must continue to implement the management plan originally approved, as specified in the conditions.
Original approval dated 20/07/2015	25. If, at any time after 5 years from the date of this approval, the **approval holder** has not **substantially commenced** the action, then the **approval holder** must not **substantially commence** the action without the written agreement of the **Minister**.
Original approval	26. Unless otherwise agreed to in writing by the **Minister**, the **approval holder** must publish all management plans referred to in these conditions of approval on the approval holder's website. Each management plan

Date of decision	Conditions attached to approval
dated 20/07/2015	must be published on the website within 1 month of being approved. The **approval holder** must notify the **Department** within 5 days of publishing the plan on the website. The management plans must remain on the website for the period this approval has effect.

Date of decision	Definitions attached to approval
Original approval dated 20/07/2015	**Approval holder** - the person undertaking the action who holds the project approval.
Original approval dated 20/07/2015	**Best practice Growling Grass Frog management guidelines** - these include the most recent versions of *Guidelines for managing the endangered Growling Grass Frog in urbanising landscapes (Victorian Department of Sustainability and Environment, 2010)*, *Procedure statement for translocation of threatened native vertebrate fauna in Victoria (Victorian Department of Sustainability and Environment, 2013)*, *Bellarine Peninsula Ramsar Site Strategic Management Plan (DEPI, 2003)*, *Urban Stormwater Best Practice Environmental Management Guidelines (CSIRO, 1999)*, Constructed Wetlands Guidelines (Victorian Government and Melbourne Water Corporation, 2010) and *Water Sensitive Urban Design Guidelines (Victorian Government and Melbourne Water Corporation, 2013)*.
Original approval dated 20/07/2015	**Best practice pollution, sediment and erosion control guidelines** - the most recent version of relevant guidelines on pollution, sediment and erosion control, such as the *Construction Techniques for Sediment Pollution Control (EPA Publication No. 275, 1991)*; and *Environmental Guidelines for Major Construction Sites (EPA Publication No. 480, 1996)*.
Original approval dated 20/07/2015	**Construction activities** - includes but is not limited to clearing of vegetation, the erection of any onsite temporary structures and the use of heavy duty equipment for the purpose of breaking the ground for infrastructure or earthworks. This does not include maintenance or use of existing access tracks, erection or construction of **security fencing** and signage, or investigative activities such as accessing the site for surveying or planning purposes.
Original approval dated 20/07/2015	**Department** - the Australian Government Department administering the ***EPBC Act***.
Original approval dated 20/07/2015	**Environmental Management Plan** - the document developed by a **suitably qualified ecologist** to the satisfaction of the **Department**, detailing the long-term management of **protected maters** within **Project Area D** and **Project Area C1**.
Original approval dated 20/07/2015	**Environmental weeds** - invasive native and non-native plants including: i listed Victorian Declared Noxious Weeds, including Artichoke Thistle *(Cynara cardunculus)*, Fennel (*Foeniculum vulgare)* and Spiny Rush(*Juncus acutus)*; ii. listed Victorian Invasive Plants, including Mirror Bush (*Coprosma repens)*, Pampas grass (*Cortaderia sp.)*, Italian buckthorn (*Rhamnus alaternus*) and Spartina/Cord Grass (*Spartina anglica* and *Spartina* x *townsendii)*; and

Date of decision	Definitions attached to approval
	iii. listed Weeds of National Significance, including Madeira vine (*Anredera cordifolia*), Asparagus weeds / Bridal Creeper (*Asparagus aethiopicus, A. africanus, A. asparagoides, A. asparagoides Western Cape form, A. declinatus, A. plumosus, A. Scandens* [excluding *A. Officinalis and A. Racemosus*]), Brooms including Flax-leaf Broom (*Cytisus scoparius, Genista monspessulana* and *G. linifolia,*), African boxthorn (*Lycium ferocissimum*), Chilean needle grass (*Nassella neesiana*), Serrated tussock (*Nassella trichotoma*), Blackberry (*Rubus fruticosus agg.),* Silverleaf nightshade (*Solanum elaeagnifolium*), Willows (*Salix spp.* [excluding *S. Babylonica*, *S. Calodendron* and *S. reichardtii*]), Gorse (*Ulex europaeus*).
Original approval dated 20/07/2015	**EPBC Act** - the *Environment Protection and Biodiversity Conservation Act 1999* (Cth)
Original approval dated 20/07/2015	**EPBC Act Environmental Offsets Policy** - the Australian Government policy document titled: *EPBC Act environmental offsets policy, Department of the Environment, 2013 Policy guiding the use of offsets under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act).*
Original approval dated 20/07/2015	**Established Spiny Rice-flower** – A Spiny-Rice flower plant that meets the following: i. was introduced into the area through the **Spiny Rice-flower Propagation Project**; and ii. is at least 2 years old.
As added on the date this instrument was signed	**Grassland Reserve** – the area of **NTGVVP** within **Project Area D** set aside as a permanent reserve, identified in Appendix B.
As added on the date this instrument was signed	**Grassland Reserve Management Plan** - specific management plan for the Grassland Reserve.
Original approval dated 20/07/2015	**Growling Grass Frog** – the frog species *Litoria raniformis,* protected under the **EPBC Act.**
Original approval dated 20/07/2015	**Growling Grass Frog buffer zone -** the area identified as Growling Grass Frog Buffer in Appendix A.
Original approval dated 20/07/2015	**Melbourne Urban Development Policy -** the document *Policy Statement for Melbourne urban development proposals needing consideration under Parts 7, 8 and 9 of the EPBC Act*, Department of the Environment, February 2014, online: http://www.environment.gov.au/system/files/resources/dc154fd1-d526-4e7d-9a8e-bd17f8ceac15/files/melbourne-urban-development_1.pdf
Original approval dated 20/07/2015	**Minister** - the Australian Government Minister administering the *EPBC Act* and includes a delegate of the Minister.
Original approval dated 20/07/2015	**NTGVVP –** is the threatened ecological community *Natural Temperate Grassland of the Victorian Volcanic Plain,* protected under the **EPBC Act.**

Date of decision	Definitions attached to approval
Original approval dated 20/07/2015	**Offset attributes –** an '.xls' file capturing relevant attributes of the offset site, including the EPBC reference ID number, the physical address of the offset site, coordinates of the boundary points in decimal degrees, the EPBC Act protected matters that the offset compensates for, any additional EPBC Act protected matters that are benefiting from the offset, and the size of the offset in hectares.
Original approval dated 20/07/2015	**Offset management plan** - an offset management plan must: • include baseline information for the offset site(s); • include details of how the offset(s) are consistent with the **EPBC Act Environmental Offsets Policy**; • demonstrates how the offset site(s) will be protected for long term conservation purposes; • include details of short and long term management measures, include timeframes for management measures for the site(s); • and identify the short and long term arrangements and responsibilities of parties in the management of the site(s).
Variation dated 04/08/2017	**Project Area A1** - the area identified as Project Area A1 in Appendix A.
Variation dated 04/08/2017	**Project Area A2** - the area identified as Project Area A2 in Appendix A.
Original approval dated 20/07/2015	**Project Area B –** the area identified as Project Area B in Appendix A.
Original approval dated 20/07/2015	**Project Area C1 –** the area identified as Project Area C1 in Appendix A.
Original approval dated 20/07/2015	**Project Area C2** – the area identified as Project Area C2 in Appendix A.
Original approval dated 20/07/2015	**Project Area D** – the area identified as Project Area D in Appendix A.
Original approval dated 20/07/2015	**Project area** – the area contained within the Proposed Residential Stage Boundaries, identified by a dashed red line in Appendix A.
Original approval dated 20/07/2015	**Protected matters – NTGVVP, Spiny Rice-flower, Striped Legless Lizard** and **Growling Grass Frog.**
Original approval dated 20/07/2015	**Security fencing** - a fence with locked gated access that prevents access by the public, while allowing dispersal of **Striped Legless Lizard.**
Original approval dated 20/07/2015	**Shapefile -** an ESRI Shapefile containing '.shp', '.shx' and '.dbf' files and other files capturing attributes including at least the EPBC reference ID number and EPBC protected matters present at the relevant site. Attributes should also be captured in '.xls' format.
Original approval dated 20/07/2015	**Significant impact -** as described in Significant Impact Guidelines 1.1 – Matter of National Environmental Significance (Department of the Environment, 2013) and any specific significant impact guidelines.
Original approval dated 20/07/2015	**Spiny Rice-flower -** the plant species *Pimelea spinescens subsp. spinescens*, protected under the **EPBC Act**.

Date of decision	Definitions attached to approval
Original approval dated 20/07/2015	**Spiny Rice-flower Propogation Project -** refers to the Spiny Rice-flower Propagation Project prepared by BL&A 2013.
Original approval dated 20/07/2015	**Striped Legless Lizard** - the lizard species *Delma impar*, protected under the **EPBC Act**
Original approval dated 20/07/2015	**Striped Legless Lizard habitat -** is any grassland (exotic and native) that may be utilised by the **Striped Legless Lizard** for breeding, sheltering, foraging or ranging.
Original approval dated 20/07/2015	**Substantially commenced -** means the installation of any permanent infrastructure associated with the action.
Original approval dated 20/07/2015	**Suitably qualified ecologist -** a person with relevant tertiary qualifications in ecology, botany or environmental science and at least 5 years of experience in surveying and field work relevant to the relevant **Protected Matter**, or any other person agreed to in writing by the **Department.**
Original approval dated 20/07/2015	**Target number -** refers to the target total of 800 individual plants as set out in the **Spiny Rice Flower Propagation Project**. In the event the person taking the action secures direct offsets for **Spiny Rice-flower** to compensate for impacts in the **project area**, the target number will be reduced on a 1:1 basis following written confirmation from the **Minister.**
Original approval dated 20/07/2015	**Trust for Nature -** meaning the organisation Trust for Nature (http://www.trustfornature.org.au/).
Original approval dated 20/07/2015	**Viable and self-sustaining -** means that the specified **Spiny Rice-flower** population demonstrates: i. Numbers of annually flowering male and female plants in proportions similar to that in natural populations; ii. That new germinants are recruiting in numbers similar to that in natural populations; and iii. A growing population where recruitment exceeds mortality to a similar extent as other managed populations

Date of decision	**Appendix A**
As varied on the date this instrument was signed	Modeina Estate Stage Development Plan, showing boundaries of **Project Areas A1, A2, B, C1, C**2 and **D**

Date of decision	**Appendix B**
As added on the date this instrument was signed	Grassland Reserve, located within **Project Area D**

APPENDIX A

DENNIS FAMILY CORPORATION

MODEINA

Stage Comparison Plan

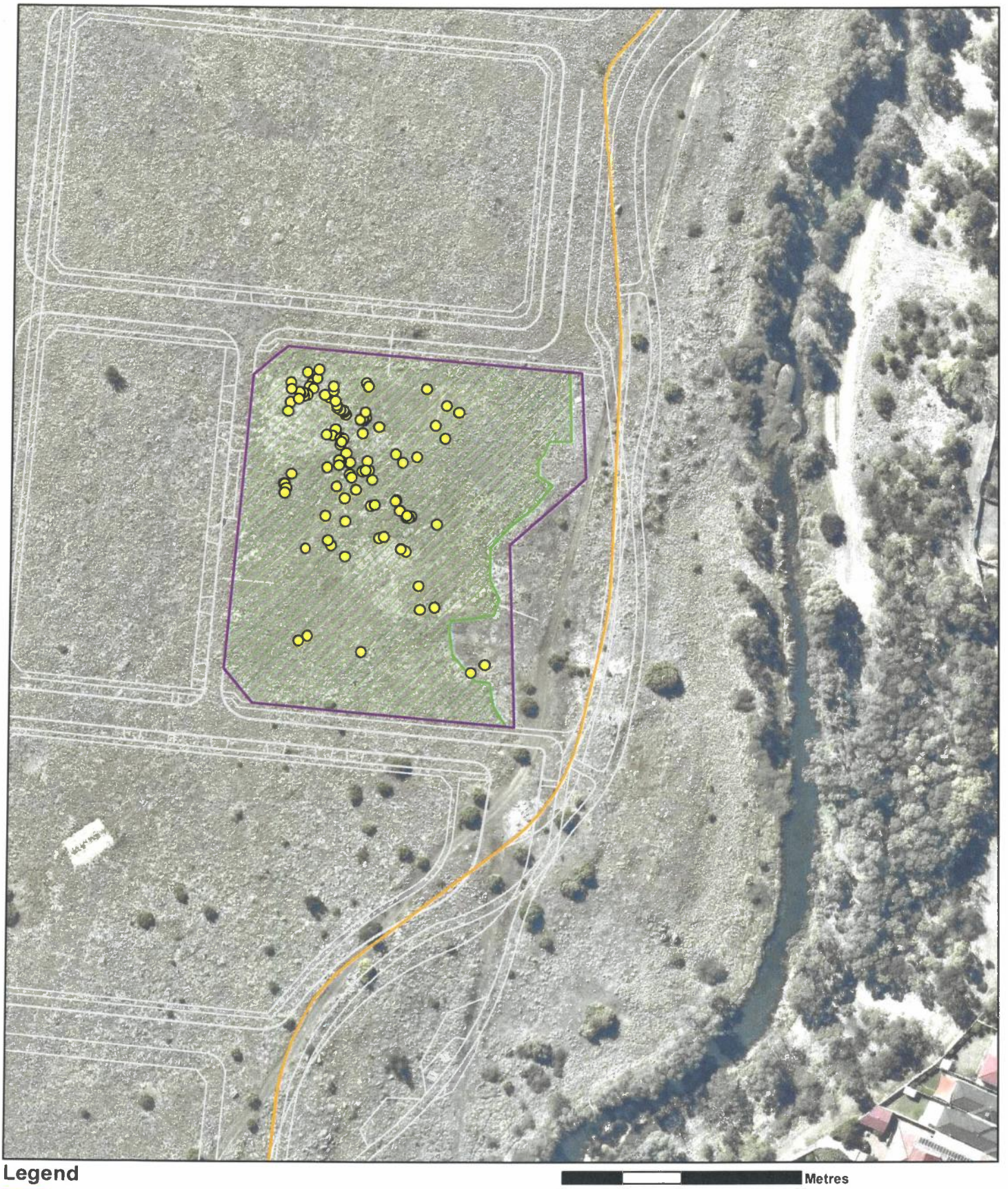
Concept Plan

Precinct 2

i. Numbers of annually flowering male and female plants in proportions similar to that in natural populations;

ii. That new germinants are recruiting in numbers similar to that in natural populations; and

iii. A growing population where recruitment exceeds mortality to a similar extent as other managed populations.



Legend

- Precinct 2
- Grassland Reserve
- NTGVVP
- Spiny Rice-flower

Metres
0 15 30 60

Modeina Precinct 2 - Grassland Reserve		
Project: Modeina Estate		
Client: DFC (Project Management) Pty Ltd		
Project No.: 7045	**Date: 14/06/2018**	**Created By: N. May / M. Wright**

BL&A Brett Lane & Associates Pty. Ltd.
Ecological Research & Management
Experience Knowledge Solutions
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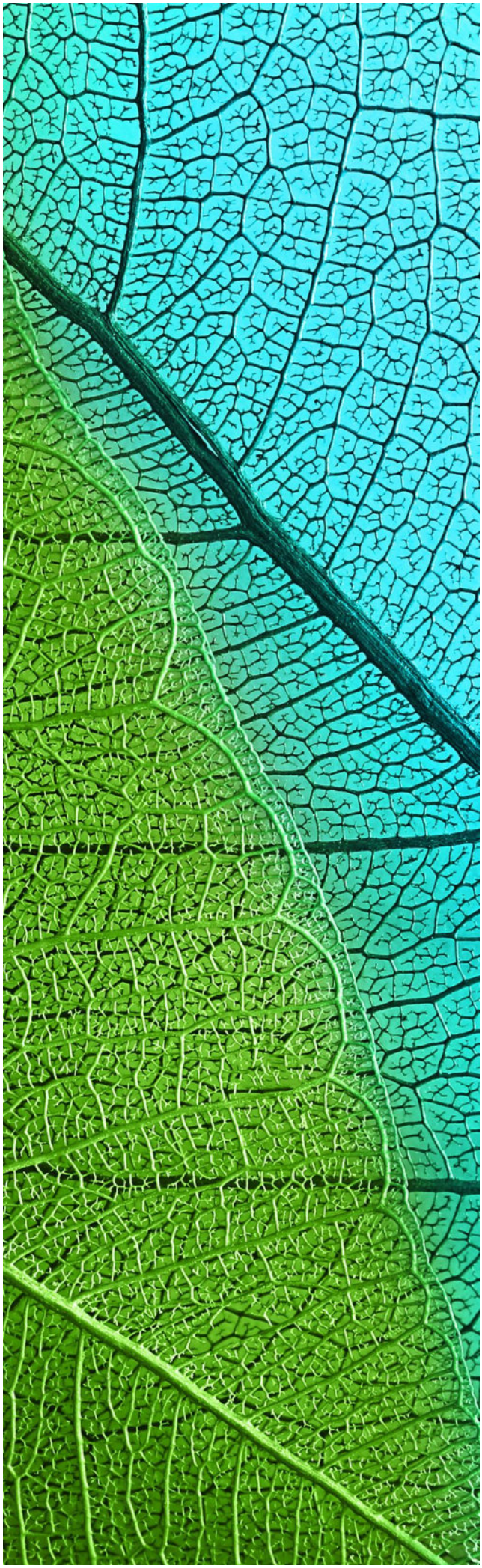
www.ecologicalresearch.com.au

N

APPENDIX B

Appendix 2: Growling Grass Frog monitoring report – Year 3



Modeina Estate Precinct 2

Growling Grass Frog Monitoring – Year 3

Prepared for Dennis Family Corporation

December 2019
Report No. 7045 (70.0)

Nature Advisory
(Formerly Brett Lane & Associates Pty Ltd)
5/61-63 Camberwell Road
Hawthorn East, VIC 3123
PO Box 337, Camberwell VIC 3124
(03) 9815 2111
www.natureadvisory.com.au

Contents

1. Introduction 3
2. Existing Information and Methods 4
2.1. Existing information 4
2.2. Methods 4
2.2.1. Survey site selection 4
2.2.2. Habitat assessment 4
2.2.3. Call playback and visual searches 4
3. Results 6
3.1. Habitat assessment 6
3.1.1. Site 3 6
3.1.2. Site 2 7
3.1.3. Site 4 8
3.2. Habitat management and recommendations 8
3.3. Call playback and visual search assessment 8
3.4. Growling Grass Frog survey results comparison and recommendations 9
4. References 10

Tables

Table 1: Call playback and visual search survey results for 11th November 2019 9
Table 2: Call playback and visual search survey results for 27th November 2019 9

Figures

Figure 1: Survey site locations 5

1. Introduction

Dennis Family Corporation (DFC) engaged Nature Advisory to undertake annual monitoring for Growling Grass Frog (*Litoria raniformis*) in the environs of Kororoit Creek adjacent to the Modeina Precinct 2 development, Burnside. In the Modeina Precinct 2 Growling Grass Frog Management Plan (GGFMP)—prepared by Nature Advisory to address Condition 3 of EPBC Act approval 2011/6063—DFC has committed to undertaking this annual monitoring during the construction of Modeina Precinct 2 and for two years post-construction.

The scope of the monitoring program includes:

- A targeted survey for Growling Grass Frog conducted over a minimum of two evenings during optimal weather conditions (i.e. warm and windless nights) during the breeding season (November to February) at three locations along Kororoit Creek adjacent to Precinct 2, including:
    - Visual encounter surveys involving spotlighting in areas of suitable habitat such as along vegetated margins; and
    - Call playback at three locations – each location within close proximity of existing wetlands along the creek;
- Characterisation and photographing of habitats at each location in daylight hours and evening weather conditions recorded.

This report is divided into the following sections:

Section 2 describes the methods used and sources of information for the investigation, including any limitations, where applicable.

Section 3 provides the results of each survey, documenting the location and abundance of Growling Grass Frog along this section of the creek.

The Year 3 monitoring and reporting was undertaken by Chris Armstrong, Cara Cappalletti, Miles Jennings (Ecologists) and Chris Dunk (Senior Ecologist and Project Manager).

2. Existing Information and Methods

2.1. Existing information

Growling Grass Frog is known to be present in this reach of Kororoit Creek based on historic survey data, including Victorian Biodiversity Atlas records from six separate occasions between 1998–2007 (DELWP 2017). The Kororoit Creek corridor is also identified as important for the conservation of GGF within the Melbourne Growth Area (Biosis Research 2012).

Kororoit Creek has been identified as supporting an important population under the federal *Environmental Protection and Biodiversity Conservation* (EPBC) *Act 1999* (EHP 2011).

2.2. Methods

2.2.1. Survey site selection

Three sites were selected in the original pre-construction surveys in January 2017 along the Kororoit Creek adjacent to Modeina Precinct 2 (Figure 1) and will be used for subsequent surveying. These are located in suitable breeding habitat for Growling Grass Frog (larger pools of deep water with instream and fringing vegetation) and in some cases coinciding with previous records (Sites 1 & 2). Due to the lack of detection and incompatible habitat characteristics, a fourth monitoring site was established on 3rd January 2019 to replace Site 1.

2.2.2. Habitat assessment

The habitat assessment was conducted by two ecologists during the afternoon on 11th November 2019, with photographs and habitat notes taken at each survey site (Figure 1). Particular attention was paid to the presence of in-stream and fringing creek-edge vegetation.

2.2.3. Call playback and visual searches

Call playback and visual search surveys were conducted by two ecologists at three sites on the 11th and 27th of November 2019 (Figure 1) after dusk. Each survey site was surveyed over these two nights when weather conditions were considered appropriate to detect Growling Grass Frog – i.e. warm evenings with an air temperature of 15°C or more, and moderate to no wind. Under these conditions frogs are more likely to be calling and active.

At each survey site 45 minutes was spent searching for frogs on each of the two nights. Field surveys took place between 21:00 (half hour after sunset, almost dark) and 01:00, Australian Eastern Daylight time (AEDT). At the beginning of each survey, a period of 5 minutes was spent at the water's edge listening and recording frog species and the abundance of frogs calling. This was immediately followed by playback of a recorded male GGF advertisement call to encourage any frogs that were present to respond. A further 5 minutes was then spent listening for a response before active searching began.

Following call playback and listening time, each site was systematically searched for frogs with a spotlight and visual inspection for 30 minutes. Call recognition and limited active searching (turning surface debris) was also conducted. The number of all frog species seen and/or heard at each survey site and notes on the nature and quality of habitat were also recorded.

Figure 1: Survey site locations

Project: GGF monitoring program
Client: Dennis Family Coorporation
Date: 13/12/2019

Legend

- GGF Management buffer
- Rock platforms
- Monitoring sites
- 2018 Growling Grass-frog observation
- 2019 Growling Grass-frog observation

N

Metres
0 200

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3. Results

3.1. Habitat assessment

3.1.1. Site 3

Site 3 was located toward the eastern end of the study area at a natural basalt rock bridge platform. Vegetation was dominated by Cumbungi (*Typha* sp.), which was present as fringing vegetation (see image below). Other common fringing species included native rushes, Knotweed (*Persicaria* sp.) along with instream Water Ribbons (*Cycnogeton procerum*). Many instream rocks were present.

Site 3 - a high cover of Common Reed present on the southern creek bank

3.1.2. Site 2

Site 2 was located in the central part of the study area, where there is a distinct bend in the creek (see image below). The main section of the creek comprised fringing Cumbungi and Common Reed (*Phragmites australis*) and submerged Knotweed. Some Black Wattle (*Acacia mearnsii*) and River Red-gum (*Eucalyptus camaldulensis*) were also present on the banks, their branches hanging over the water.

Site 2 –Cumbungi, Common Reed and a high cover of in-stream Knotweed

This site included a tributary of standing water which was located on the northern side of the creek. This tributary contained a high cover of fringing vegetation and a moderate cover of emergent vegetation. Slender Knotweed (*Persicaria decipiens*) was present as in-stream and fringing vegetation. Other fringing plants included the introduced species Drain Flat Sedge (*Cyperus eragrostis*), Curled Dock (*Rumex crispus*) and some grasses.

3.1.3. Site 4

Site 4 was located toward the north-western region of the study area, near an existing rock escarpment. Vegetation was dominated by Common Reed, which was present as fringing vegetation (see image below). Other common fringing species included native rushes, and instream Water Ribbons. Toowoomba Canary-grass (*Phalaris aquatica*) was also found to be dominant along the northerly banks of the creek. Mosquitofish were also seen in the vicinity.

Site 4 – Fringing Common Reed, Phalaris, with in-stream Water Ribbons in the background

3.2. Habitat management and recommendations

The Year 3 habitat assessment revealed good quality, structural habitat at each of the three sites, consistent with the findings of the pre-construction and Year 2 surveys.

It is considered that construction mitigation measures outlined in an Environmental Management Plan (EMP) and Construction Environmental Management Plan (CEMP) have been effective to date and should continue to be implemented.

3.3. Call playback and visual search assessment

During the first survey conducted on 11th November 2019, frogs were detected at all three sites. Call playback revealed one Growling Grass Frog, which was later seen during active searching. Other common frog species were also recorded. The results of the first survey are detailed in Table 1.

Table 1: Call playback and visual search survey results for 11th November 2019

Date	Site #	Time - start	Temp (°C)	Humidity (%)	Call Playback	Spotlighting
11/11/2019	2	20:40	21	15	Growling Grass Frog (1 heard) Eastern Banjo Frog (4 heard)	Growling Grass Frog (1 seen/1 heard) Eastern Banjo Frog (7 heard) Spotted Marsh Frog (1 heard)
	4	22:42	22	18	Spotted Marsh Frog (1 heard)	Eastern Banjo Frog (2 heard) Eastern Common Froglet (1 heard)
	3	00:40	24	17	Spotted Marsh Frog (8 heard)	Eastern Banjo Frog (1 heard) Eastern Common Froglet (1 heard)

The second survey was conducted on 27th November 2019. No Growling Grass Frog were seen or heard. Common species were heard at two of the three sites. The results of the second survey are presented in Table 2.

Table 2: Call playback and visual search survey results for 27th November 2019

Date	Site #	Time - start	Temp (°C)	Humidity (%)	Call Playback	Spotlighting
27/11/2019	3	21:23	17	59	None	None
	2	22:00	16	58	Eastern Banjo Frog (4 heard)	None
	4	23:00	16	55	Spotted Marsh Frog (1 heard)	Striped Marsh Frog (1 heard)

3.4. Growling Grass Frog survey results comparison and recommendations

The Year 3 monitoring survey recorded Growling Grass Frog at one of the three sites – consistent with the findings of the pre-construction survey and Year 2 monitoring.

The findings of these surveys were consistent with Year 1 and Year 2 findings in providing evidence of the species presence and persistence in the adjacent wetland areas at the 'apex' of the creek's bend (Site 2). The absence of records from Sites 1 & 3 do not necessarily indicate that the species is absent from other reaches of the creek adjacent to the study area.

4. References

Biosis Research 2012*, Review of habitat corridors for Growling Grass Frog* Litoria raniformis *within Melbourne's Urban Growth Areas*, Report for the Department of Sustainability and Environment.

Brett Lane & Associates (BL&A) Pty Ltd 2003, *Modeina Estate, Burnside – Flora and Fauna Assessment, Report No. 7045 (3.1)*, Prepared for The Dennis Family Corporation, c/o Tract Consultants Pty Ltd.

Department of Environment, Land, Water and Planning (DELWP) 2017, *Victorian Biodiversity Atlas 3.1.0*, Department of Environment, Land, Water and Planning, East Melbourne, Victoria, viewed 7th July 2017, < https://vba.dse.vic.gov.au>.

Ecology and Heritage Partners (EHP) Pty. Ltd. 2011, *Sub-regional Growling Grass Frog* Litoria raniformis *Conservation Strategy within the revised Urban Growth Boundary and Associated 28 Precincts: Technical Background and Guidelines*, Prepared for the Department of Sustainability and Environment.

Appendix 3: Karabeal compliance reporting

Department of Environment,
Land, Water & Planning

8 Nicholson Street
East Melbourne Victoria 3002

FF/39/6528

Mr Marshall Dennis
MG Pastoral Co. Pty Ltd
C/- Suite 2, 2-6 Glenferrie Road
MALVERN VIC 3144

30 September 2019

Kavabeal.

Dear Mr Dennis,

BushBroker monitoring and compliance: BB-3005 LA01 sites 1 & 2

Thank you for the opportunity for Greg Waddell to visit your property on behalf of the Department of Environment, Land, Water and Planning (DELWP) on 13 August 2019. The purpose of this letter is to inform you of the outcomes of the monitoring for year 2 of your agreement.

Compliance status

In order to be deemed as compliant with your agreement BB-3005 LA01 sites 1 & 2 for Year 2, actions outlined below need to be completed and a report submitted with sufficient supporting evidence (eg; photos, receipts) to demonstrate your compliance by end of December 2019:

- Woody Weeds– Ensure all woody weeds are cut and painted as per the Management Plan – within 3 months.
- Herbaceous Weed Control – ensure High Threat Weeds listed above are controlled to a high level – within 3 months
- Fencing – realign the northern boundary fence at the eastern corner in zone 1L to match the required site area
- Rubbish – remove old internal fencing wire and any rubbish from the sites – within 3 months

You may provide evidence of compliance sooner if works are completed and you can provide a report of completed actions and supporting evidence.

Monitoring report and ongoing actions to continue to remain compliant

You will have already received the monitoring report and aerial monitoring notes which are a record of the observations and discussions with Greg Waddell on the day. The monitoring report outlines agreements made between yourself and DELWP to continue to achieve positive biodiversity outcomes within your sites.

Monitoring Report

BB- 3005 LA-01 Sites 1,2 **Year** 2 date: 13/08/19

Officer: Greg Waddell

General observations/comments/condition:

Signed 3/4/17 Last Monitored: N/A

Large patch of Plains Grassland with small area of remnant Grassy Woodland which follows a drainage line. Sites 1 & 2 are essentially the same site separated due to parcel boundaries. There are however 17 zones in site 1 and 15 zones in Site 2, divided due to differences in scoring in the same Heavier Soils Plains Grassland vegetation. The zones range in quality from quite intact remnants with high native grass cover and good herbs, to very weedy zones with minimal native grass cover and few or no herbs. There are internal fences running through the property which are stock proof and could provide for cell grazing of different paddocks although there is no grazing noted in the MP. The drainage line is fenced on both sides. There are some planted non-local trees/shrubs present, and one remnant VLOT Red Gum in the drainage line with plenty of recruitment around it. Some mosses observed and a lot of turned over soil from a burrowing animal which make the ground uneven in many areas. This animal may be native or introduced. It was very wet underfoot over a lot of the sites. The NE area of site 1 has been burnt recently and is generally the best quality vegetation. Vegetation cover (weeds and natives) is >70% across all zones. Many of the grasses show they have flowered and seeded as they still have tall stems. The sites were assessed in January 2016, so they look very different to the original assessment (monitoring now in winter). This site is also offset for striped legless lizard which has been found on site, and there are tiles placed in a couple of zones to monitor the population, although no directions re this noted in the MP.

Fencing:

Stockproof perimeter fencing of the property. An internal fence still runs E-W dividing the northern and southern halves of Site 2 (there is no fencing along the parcel line), and as well as the drainage line fencing, there is a fence dividing the NE area of Site 1 into its own paddock, and a N-S fence dividing the middle of sites 1 and 2 into separate paddocks.

The N boundary fencing of Site 1 (along 1L) is incorrectly aligned at the eastern end so some of zone 1L is unfenced. Re-align the last corner to the east to match the site area.

There is a triangular section of fence near the stockyards which should be removed if not used anymore.

Pest animal activity:

One hare and evidence of fox was observed on site but no evidence of rabbits. There are many small burrows (Bush Rat/Dunnart/House Rat?) which have been dug which create an undulating and spongy ground level and new soil being thrown onto the existing vegetation. Monitor to determine which animal is digging the burrows and control if it is an introduced animal. Use a monitoring camera on one of the active burrows and get a positive ID on the species. The animal may be preying on Striped legless Lizard. Future control to be determined in consultation with DELWP after ID.

Woody weeds:

Three Boxthorn plants are present in 1M under the large Red Gum, one very large plant, and two smaller plants. These show no sign of treatment and need to be cut and painted. There are also a few Boxthorn in the excluded Sugar Gum area near 1N and 2D. Control of these is recommended as well to reduce likelihood of seed spreading into the sites.

There are also several non local natives that have been planted:

Blue Gum, Pink Flowering Yellow Gum, Callistemon sp? (id), Sticky Wattle(*Acacia howittii*) in 1M, and Spotted Gum, and another non-local Wattle in 2E. There are also a few Cypress trees and a European Ash in 2E to remove. These were not mentioned in the original MP. Cut and paint any non local species. All woody weeds required to be eliminated by the end of year 2.

Grassy/herbaceous weeds:

The MP requires that herbaceous and grassy weeds do not increase beyond the level observed at the time of the assessment.

There is a broad cover of weeds across the sites with covers often over 60%. The exceptions to this are 1F, 1G which have been mostly burnt which now have a very low cover. Other better quality remnant zones with weed covers below 25% are 1A-E, 2A, and 1H where a lot of the cover is from Onion Grass. Onion Grass is also widespread across the sites and is controllable where present among weed dominated areas. Generally, the dominating widespread High Threat weeds are Yorkshire Fog Grass, Flatweed, Sweet Vernal Grass, and Phalaris. Other High Threat weeds in more scattered smaller infestations are Brown-top Bent Grass, Perennial Rye Grass, Spear Thistle, Ox-tongue Thistle, Paspalum, Prickly Lettuce, Buckshorn Plantain(1M,1C), South African Orchid (1C,1A), Aster-weed (1E,1O,1M,2N), and Wild Gladioli (in the channel just outside the northern edge of 1C). There is a broad cover of annual grassy weeds (AGW's) with only a few weedy herbs observed such as Sorrel, Clover, and Capeweed, Stinkwort. AGW's are as per the list in the Management Plan. There was no evidence of spot spraying observed.

In all zones except 1F,1G,1H,2A, weed cover has increased beyond the level at assessment, and often well beyond. Even with the discrepancy between the original summer assessment and this winter monitoring, I believe that a significantly higher level of weed control is required. Due to this high weed cover and the lack of mosaic burning or spot spraying being carried out as required by the MP, I believe that mosaic burning and spot spraying alone may not be sufficient to improve the site to the level required. At this stage I believe the only zones which is likely to have sufficient biomass to require burning is 1F & 1G. I believe burning should be carried out as a weed control tool, more than biomass control.

Since weed cover is generally significantly higher than levels at the assessment, I believe there is a case for using strategic pulse grazing to control weeds (as well as spot spraying). This would be particularly beneficial for Sweet Vernal, and other annual weeds. Vegetation cover is over 70% in all zones, and reducing/stopping weed seeding will be beneficial for both the grazed area, and adjoining areas that have been burnt. Grazing could be carried out if grassy weed cover is >25%. Focus grazing on the weediest areas and exclude the low weed areas (for burning only). Grazing may be most beneficial for weed control in Spring (Oct) – refer to document supplied by Monitoring Officer: *'Grazing Tool for Managing Grassy Woodlands and Grasslands of Northern Victoria'* as a guide for grazing different weed and native grass levels in each area. Stocking rates should be high and grazing period as short a period as possible to achieve required weed control. Ensure no grazing occurs when

soil is damp, and ensure any grazing of Annual Grassy Weeds prevents those weeds seeding in that year. No grazing within fenced drainage line areas and stock to be put in clean holding paddock prior to grazing. Grazing also needs to consider the seeding of Native grasses. Burning could then be carried out in the following autumn. A gazing plan will need to be presented to DELWP for approval. Otherwise no stock are permitted into the sites at any time. Grazing effectiveness to be reviewed after the first year of being carried out to ascertain if further grazing is needed in future years.

Cover of weeds per Habitat Zone:

Site/Zone	Total cover of woody weeds (%)	Total cover all herbaceous weeds (%)
1A	0%	20% (originally 15%)
1B	0%	15% (originally 10%)
1C	0%	15% (originally 10%)
1D	0%	15% (originally 10%)
1E	0%	20% (originally 10%)
1F	0%	2% (originally 5%)
1G	0%	5% (originally 40%)
1H	0%	20% (originally 40%)
1I	0%	60% (originally 40%)
1J	0%	70% (originally 40%)
1K	0%	70% (originally 40%)
1L	0%	60% (originally 45%)
1M	<1%	35% (originally 25%)
1N	0%	90% (originally 20%)
1O	0%	25% (originally 10%)
1P	0%	60% (originally 40%)
1Q	0%	35% (originally 20%)
2A	0%	20% (originally 40%)
2B	0%	70% (originally 40%)
2C	0%	80% (originally 40%)
2D	0%	90% (originally 20%)
2E	<1%	75% (originally 40%)
2F	0%	25% (originally 20%)
2G	0%	75% (originally 30%)
2H	0%	90% (originally 25%)
2I	0%	70% (originally 40%)
2J	0%	85% (originally 40%)
2K	0%	50% (originally 40%)
2L	0%	90% (originally 10%)
2M	0%	90% (originally 10%)
2N	0%	30% (originally 15%)

Main issues or threats; e.g. stock activity, tree/log removal:

All rubbish is required to be removed from the sites. Remove any old fencing wire (2F, 1B, 2E) and old iron in 1M, and the pile of old wire in 1H.

Internal fencing wire is generally required to be removed to allow clear access for native animals, however, since grazing is a biomass and weed control method, it may be useful to leave the internal fencing to allow for more concentrated high stocking pulse grazing.

The drainage line cuts through some steeper banks and winds around which increases potential for erosion. There is a small active head erosion on the steep northern bank of the drainage line in 1M, near the western end of 1C, and a larger bank undercut in the eastern side of 1O next to the boundary of 1M. Contact local CMA for advice on controlling erosion and carry out any recommended actions. Continue to monitor for any increase in erosion along the drainage line.

According to the Management Plan, mosaic burning must be carried out annually over 20%-33% of each site covering all zones except 1M. There is evidence of a recent mosaic burn in the NE corner of site 1 which covers about 20% of the site, however there has been no burning over site 2 which requires a larger area to be burnt. There is no evidence of burning being carried out in Year One though. I believe burning 33-50% of Site 2 and 33% of Site 1 this coming Autumn focussed on the weediest areas is required. Ongoing weed control is to be carried out following each burn to ensure new germinating weeds to not set seed and spread. Flatweed is a particular threat here as well as any other seed that blows easily on the wind such as thistles. Broad-leaf spray may be the best way to control Flatweed/thistles.

Supplementary planting / revegetation:

N/A

Other observations / notes / feedback:

I'm not sure why there are so many zones separated out for these sites, and looking at the surrounding areas. I believe there may be a case for some of the Heavier Soils Plains Grassland being Plains Grassy Woodland despite the heavy soils??. (There are also remnants of Golden Wattle, Red Gum, Blackwood, and Tree Everlasting).

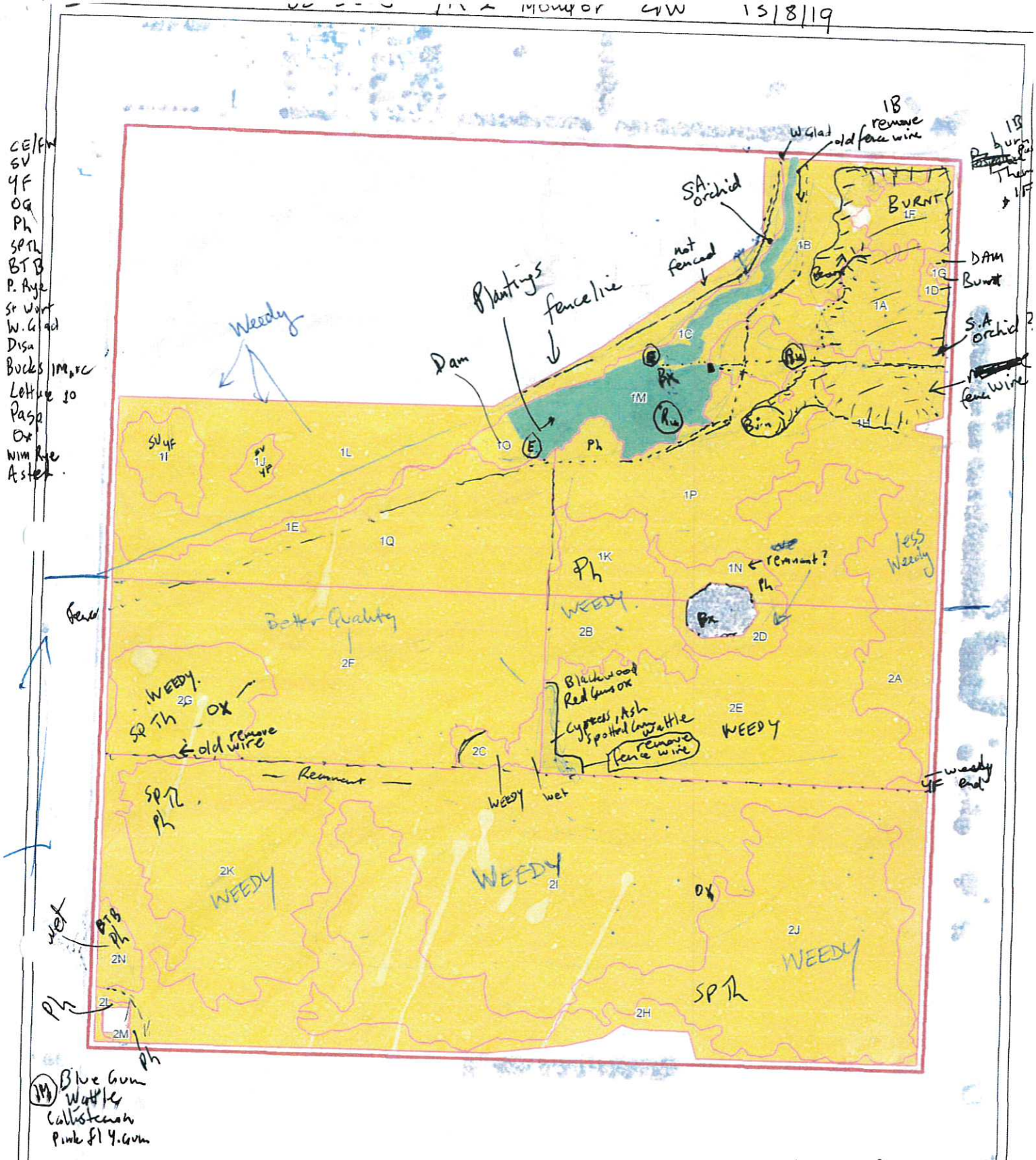
2L and 2M are the dam walls which are covered in Phalaris, but have been given a low weed score.. Perhaps they were heavily grazed at the time of the assessment but they would not make remnant status now. 1N, 2D, 2H and many areas within the other zones would also not make remnant status now as native cover is <25%.

This is a first party offset. Ensure there names for the paddocks so grazing/burning can be focussed and clearly understood.

No evidence of Roo grazing impacts, although if they appear in the future, monitor for impacts to growth and seeding of native grasses, and control grazing if native grasses are not growing and seeding to their potential.

LH agreed to mgmt actions above in personal conversation 15/8/19
Aerial Monitor Notes, GPS weedpoints file, 'Grazing Management in Grasslands' document, and Mon report emailed to LH 16/08/19

15/8/19



CE/FW
SU
YF
OG
Ph
SP Th
BTB
P. Rye
St Wort
W. Glad
Disa
Bucks
IM, FC
Lettuce
Pasp
Ox
Wim Rye
Astel.

Aerial plan BB-3005, Crown Allotments 71 &72, Parish of Panyyabyr

Project: Karabeal credit site Client: Dennis Family Corporation Date: 10/01/2017

Crown Allotments 71 &72, Parish of Panyyabyr

EVC

Heavier Soils Plains Grassland (EVC 132_61)

Plains Grassy Woodland (EVC 55_61)

Cassinia, Blackwood, Golden Wattle, Red Gums } PGW?

No grazing burnt owners for 1yr?

Tiles SU? PGW? Hare Fx

Wet. Rats? soil dist. Pulse grazing old fence wire 1L not fully fenced IM Erosion. Assess date?

N

Metres 0 120

First Party?

BL&A Brett Lane & Associates Pty. Ltd.

PO Box 337, Camberwell, Vic 3124, Australia
www.ecologicalresearch.com.au
P: 03 9815 2111 - F: 03 9815 2885

GPS points.

Biomass Autumn Graze Broadleaf Spray
Weed control Spring graze? Follow up weed control after burn

G. R. Hewitt trading as

Small Farm Contracting Pty Ltd

A.B.N.: 30 608 262 942

POSTAL ADDRESS:
P.O. BOX 61, LEOPOLD 3224

TRADING ADDRESS:
30 Como Road, LEOPOLD 3224

Ph: (03) 5250 1693
Mob: 0417 044 464
Fax: (03) 5250 2743

Online: www.smallfarms.com.au
Email: grahamrhewitt@gmail.com

Tax Invoice

Bill To:

Millwood Farm Services Pty Ltd
Attn: Accounts Payable
Ground Floor, Suite 2
2 - 6 Glenferrie Road
Malvern Vic 3144

Invoice #: 00002557
Date: 9/07/2019

Page: 1

COMMERCIAL OPERATORS REGISTERED LICENCE NO. 126

DATE	DESCRIPTION	AMOUNT	CODE
24/06/2019 5/07/2019	Preparation at "Karrabeal" for burning pasture. Successful cold burning of AREA 1 at "Karrabeal" as shown on BUSHBROKER ZONE PLAN by the Small Farm Contracting team. Happy to report a successful and safe burn at the property. Kind regards, Graham Hewitt Manager	$3,217.50	NT

Auth	Date
Marshall Dennis	
Co/Bus Number	Amount
GL Code	

SIGN HERE

10/7/19 copy of inv back to MD plz

Payment by Cheque to Postal Address or Electronic Funds Transfer (EFT)
*****PLEASE NOTE: NEW BANK DETAILS BELOW*****

EFT DETAILS:
Account Name: Small Farm Contracting
Bank: Bendigo Bank
BSB: 633-108
ACCOUNT NUMBER 1559 - 95590

GST:	$0.00
Total Inc GST:	$3,217.50
Amount Applied:	$0.00
Balance Due:	$3,217.50

G. R. Hewitt trading as

Small Farm Contracting Pty Ltd

A.B.N.: 30 608 262 942

POSTAL ADDRESS:
P.O. BOX 61, LEOPOLD 3224

TRADING ADDRESS:
30 Como Road, LEOPOLD 3224

Ph: (03) 5250 1693
Mob: 0417 044 464
Fax: (03) 5250 2743

Online: www.smallfarms.com.au
Email: grahamrhewitt@gmail.com

Tax Invoice

Bill To:

Millwood Farm Services Pty Ltd
Attn: Accounts Payable
Ground Floor, Suite 2
2 - 6 Glenferrie Road
Malvern Vic 3144

Invoice #: 00002552
Date: 12/05/2019

Page: 1

COMMERCIAL OPERATORS REGISTERED LICENCE NO. 126

DATE	DESCRIPTION	AMOUNT	CODE
15/04/2019	Commencement of Fencing project at the Karabeal property, western Victoria, services proudly supplied by the Small Farm Contracting team. 2220 metres of fence construction on the property with 3x3.00metre gates fitted. All fencing consisted of 'easy-slot' strainers and assemblies, galvanised posts at 5 metre intervals and 5 plain wires together with 6-row ringlock fitted. Stage 1. Collection of 402 posts from Quandong (Millwood) together with 15 waratah assemblies and cleaned. Stage 2: All other materials acquired new: wire, posts, gates, stocklock wire, star posts stay/gripples/gate hinge Stage 3. 2220 metres of fence construction on Karabeal property. Completion of the project on 7/5/2019. Total cost: $24754.56 +GST	$27,230.00	NT
	We have enjoyed providing our tailor-made services for your property development program at Karabeal and we trust you are pleased with the outcome as are we. Kind regards, Graham Hewitt Manager		

Auth	Date
	13/5/19
Marshall Dennis	
Co/Bus Number 40	Amount
GL Code 955 | 3962	$27,230.00

SIGN HERE

Payment by Cheque to Postal Address or Electronic Funds Transfer (EFT)
*****PLEASE NOTE: NEW BANK DETAILS BELOW*****

EFT DETAILS:
Account Name: Small Farm Contracting
Bank: Bendigo Bank
BSB: 633-108
ACCOUNT NUMBER 1559 - 95590

GST:	$0.00
Total Inc GST:	$27,230.00
Amount Applied:	$0.00
Balance Due:	$27,230.00

Appendix 4: Campbelltown compliance reporting

Department of Environment,
Land, Water & Planning

8 Nicholson Street
East Melbourne Victoria 3002

FF/39/6530

Mr Marshall Dennis
MG Pastoral Co. Pty Ltd
C/- Suite 2, 2-6 Glenferrie Road
MALVERN VIC 3144

30 September 2019

Campbelltown.

Dear Mr Dennis,

BushBroker monitoring and compliance: BB-3004 LA01 sites 1,2,3,4

Thank you for the opportunity for Greg Waddell to visit your property on behalf of the Department of Environment, Land, Water and Planning (DELWP) on 2 August 2019. The purpose of this letter is to inform you of the outcomes of the monitoring for year 2 of your agreement.

Compliance status

In order to be deemed as compliant with your agreement BB-3004 LA01 sites 1,2,3,4 for Year 2, actions outlined below need to be completed and a report submitted with sufficient supporting evidence (eg; photos, receipts) to demonstrate your compliance by end of December 2019:

- Woody Weeds– Ensure all woody weeds are cut and painted as per the Management Plan and branches removed from all sites – within 3 months.
- Herbaceous Weeds – carry out spot spraying on High Threat weeds within all sites – within 3 months
- Rubbish – remove old internal fencing wire from smaller paddocks (posts can remain) in site 1 – within 3 months
- Pest Animals – fumigate and hand collapse the burrow adjacent to the south boundary of site 1 – within 2 months

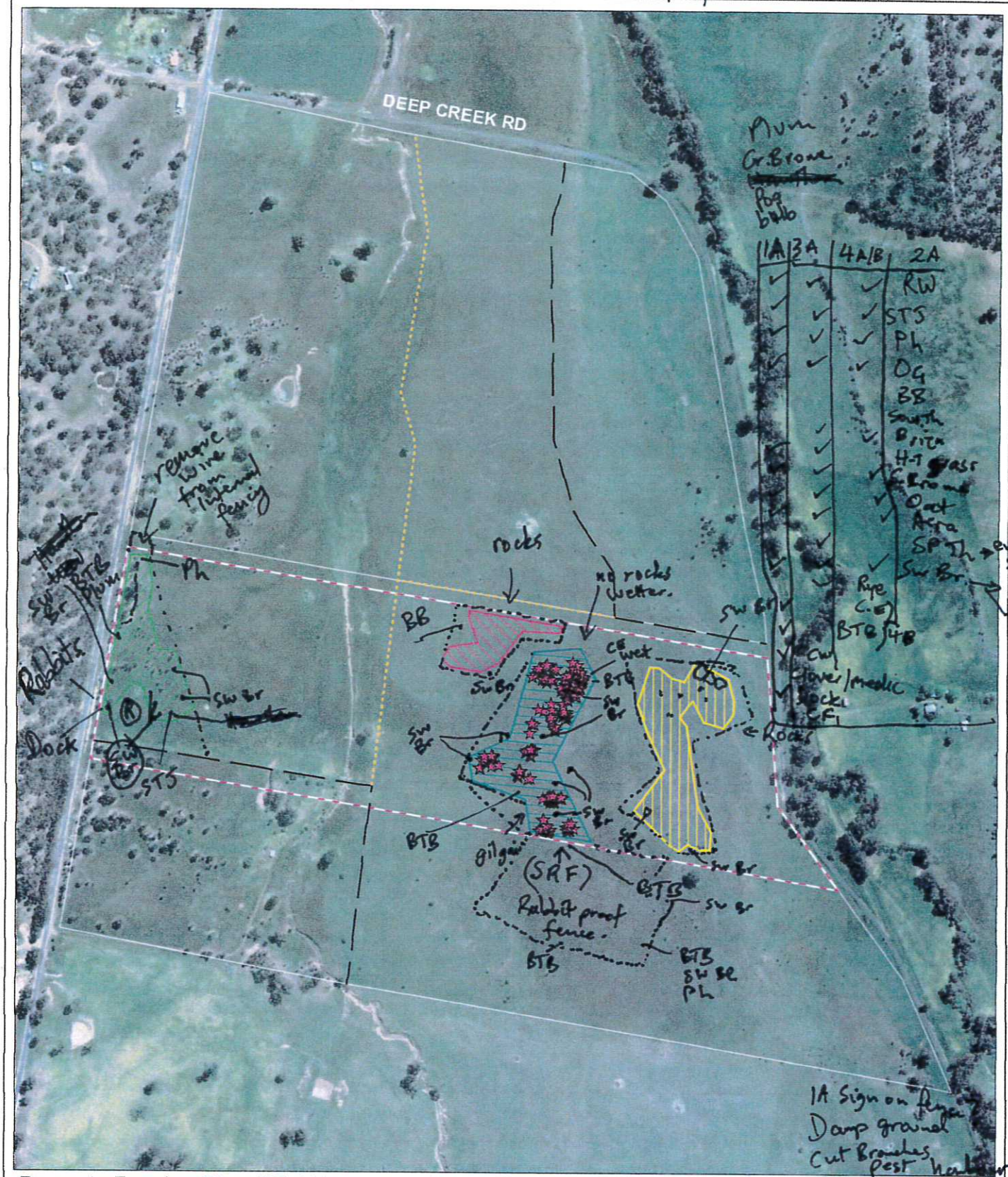
You may provide evidence of compliance sooner if works are completed and you can provide a report of completed actions and supporting evidence.

Monitoring report and ongoing actions to continue to remain compliant

You will have already received the monitoring report and aerial monitoring notes which are a record of the observations and discussions with Greg Waddell on the day. The monitoring report outlines agreements made between yourself and DELWP to continue to achieve positive biodiversity outcomes within your sites.

Please ensure you continue to meet your obligations under the agreement including all issues identified in the monitoring report, including:

BB-3004 YR2 Monitor GW 2/8/19



Property Fencing Plan, BB-3004

Project: Campbelltown Offset Site **Client:** Dennis Family Corporation **Date:** 15/12/2016

Ph: 457 1C

Monitoring Report

BB- 3004 LA-01 Site 1 **Year** 2 date: 02/08/19

Officer: Greg Waddell

General observations/comments/condition:

Last Monitored: N/A

Small remnant Grassy Woodland based around presence of immature trees and native grasses. Few native herbs present, but a few species of grass and good cover of native grasses, good leaf litter, one large fallen tree as a log, good soil crust, some mosses and about 10 canopy recruits. The site is divided by an internal fence running parallel to the road boundary fence, and the new eastern fencing is has been erected a fair way east of the actual site boundary. The southern fence is also a long way from the site boundary.

Fencing:

Stockproof – fenced area is bigger than the actual polygon offset site area.

Pest animal activity:

Scratchings and fresh rabbit droppings observed in the site, and an active burrow observed just outside the site boundary under the large log at the southern end. Fumigate and collapse burrow.

Woody weeds:

Several Sweet Briar scattered across the site which look to have been sprayed but are now re-growing and many have berries present. Cut and Paint plants as directed in the Management Plan and also remove berries from the site so they do not germinate on site in the future. 1 Plum tree was also observed which requires cutting and painting. All woody weeds required to be controlled by the end of year 2.

Grassy/herbaceous weeds:

Broad cover of Onion Grass as the main weed cover. Site generally weedier with annual grassy weeds (AGW's) further away from trees. Scattered infestations of High threat Phalaris and St. John's Wort and sparse smaller infestations of Bulbous Meadow Grass, Cat's Ear, Ribwort, Dock (SW end – remove tap root of mature plants), Brown-top Bent Grass (mid W boundary), all to be spot sprayed. Annual Clover and Capeweed also present in small areas but are a low threat at this stage.

Cover of weeds per Habitat Zone:

Site/Zone	Total cover of woody weeds (%)	Total cover all herbaceous weeds (%)
1A	<1% (although several plants present to be controlled)	65% (mostly Onion Grass, with AGW's about 25%).

Main issues or threats; e.g. stock activity, tree/log removal:

Remove any cut branches of woody weed that have been cut and painted.

Remove all wire from the internal fencing.

Signage may need to be added to the main road fence to deter illegal firewood collection as logs increase in the site?

MS to action

According to the Management Plan, strategic grazing can be carried out if Annual Grassy Weeds cover is >25%. Annual Grassy Weed cover is only 25% (not including Onion Grass), so grazing has not been carried out. I believe it is unlikely that grazing will be required in this site to control biomass in the near future, although the landholder may wish to temporarily fence the site off from the other weedy areas within the fenceline and graze them to help prevent weed seeds entering the site.

Supplementary planting / revegetation:

N/A

Other observations / notes / feedback:

Only 3 weeds noted in the Management Plan for management, although there are several High Threat weeds to control.

Ensure no grazing occurs when soil is damp, and ensure any grazing of Annual Grassy Weeds prevents those weeds seeding in that year. Grazing also needs to consider the seeding of Native grasses.

Monitor for any impacts to growth and seeding of native grasses by grazing kangaroos, and control grazing if native grasses are not growing and seeding to their potential.

Management actions discussion to be had with LH on Thurs 15th Aug (or in Phone conversation ?/8/19)

Aerial Monitor Notes and Mon report emailed to LH 6/08/19

Monitoring Report

BB- 3004 LA-01 Sites 2,3,4 **Year** 2 date: 02/08/19

Officer: Greg Waddell

General observations/comments/condition:

Last Monitored: N/A

3 sites of remnant grassland with good cover of native grasses (and some diversity), a few scattered herbs (more cover and diversity of herbs in site 4), and a broad cover of Annual Grassy Weeds (AGW's) including Onion Grass. Rocks in 2A and 3A which are drier sites than site 4. Site 4 has the Spiny Rice Flower population.

Fencing:

Stockproof, all new fencing – fenced area is bigger than the actual polygon offset site area. Rabbit proof fencing on site 4 (Spiny Rice Flower population).

Pest animal activity:

None observed.

Woody weeds:

Several Sweet Briar scattered across 4B and 3A with one plant in 2A, none in the small zone 4A, and two larger concentrated infestations in the NE and SW of 3A. Plants look to have been sprayed but are now re-growing and many have berries present. Cut and Paint plants as directed in the Management Plan and also remove berries from the site so they do not germinate on site in the future. 1 large Blackberry infestation was also observed within the 2A fenceline but just outside the site boundary. Control is recommended to prevent spread and remove pest harbour. All woody weeds required to be controlled by the end of year 2.

Grassy/herbaceous weeds:

Broad cover of Onion Grass, Ribwort, and annual grassy weeds (AGW's). Scattered infestations of High threat Phalaris and St. John's Wort, and sparse smaller infestations of Spear Thistle, Dock (ensure it is not the native Dock species, and remove tap root of mature plants), Brown-top Bent Grass, Cat's Ear, (4B), Cocksfoot (3A), all to be spot sprayed. Annual Clover/medic and Capeweed also present in small areas but are a low threat at this stage. Ribwort can be controlled with a Broad-leaf spray to avoid off-target damage to native grasses.

Cover of weeds per Habitat Zone:

Site/Zone	Total cover of woody weeds (%)	Total cover all herbaceous weeds (%)
2A	<1%	Total Veg Cover: 95% Native Grass Cover: 25% Total Weed Cover: 70% AGW Cover: 65%
3A	<1%	Total Veg Cover: 95%

Site/Zone	Total cover of woody weeds (%)	Total cover all herbaceous weeds (%)
		Native Grass Cover: 30% Total Weed Cover: 65% AGW Cover: 60%
4A/B	O%/<1%	Total Veg Cover: 90% Native Grass Cover: 20% Total Weed Cover: 70% AGW Cover: 65%

Main issues or threats; e.g. stock activity, tree/log removal:

Remove any cut branches of woody weed that have been cut and painted.

Control of AGW's:

According to the Management Plan, strategic grazing can be carried out if Annual Grassy Weeds cover is >25%. Annual Grassy Weed cover is much greater than 25% (not including Onion Grass), so grazing could be carried out, but has not yet been done. Grazing of AGW's will help prevent seed set. No biomass control has been carried out although the management plan recommends mosaic burning every 1 to 2 years

It appears biomass control of native species is generally being carried out by the large population of Kangaroos.

Supplementary planting / revegetation:

N/A

Other observations / notes / feedback:

Only 3 weeds noted in the Management Plan for management, although there are several High Threat weeds to control.

Ensure grazing is carried out as per the Management Plan and contact DELWP if any alterations are desired.

Ensure no grazing occurs when soil is damp, and ensure any grazing of Annual Grassy Weeds prevents those weeds seeding in that year. Grazing also needs to consider the seeding of Native grasses.

Monitor for any impacts to growth and seeding of native grasses by grazing kangaroos, and control grazing if grasses are not growing and seeding to their potential. Exclusion plots may be required in each site to compare grazing vs non-grazing of native grasses by the kangaroos.

Spiny Rice Flower (SRF) flowering season noted as both March and April to August (inclusive) in the Management Plan. SRF was flowering at the time of monitoring and may take longer than the end of August to set seed. Monitor SRF to ensure seed set has occurred before any grazing or burning.

Management actions discussion to be had with LH on Thurs 15th Aug (or in Phone conversation ?/8/19)

Aerial Monitor Notes and Mon report emailed to LH 6/08/19

G. R. Hewitt trading as

Small Farm Contracting Pty Ltd

A.B.N.: 30 608 262 942

POSTAL ADDRESS:
P.O. BOX 61, LEOPOLD 3224

TRADING ADDRESS:
30 Como Road, LEOPOLD 3224

Ph: (03) 5250 1693
Mob: 0417 044 464
Fax: (03) 5250 2743

Online: www.smallfarms.com.au
Email: grahamrhewitt@gmail.com

Tax Invoice

Bill To:

Millwood Farm Services Pty Ltd
Attn: Accounts Payable
Ground Floor, Suite 2
2 - 6 Glenferrie Road
Malvern Vic 3144

Invoice #: 00002550
Date: 25/04/2019

Page: 1

COMMERCIAL OPERATORS REGISTERED LICENCE NO. 126

DATE	DESCRIPTION	AMOUNT	CODE
9/04/2019 16/04/2019	Commencement of intensive program of removal of all Hawthorne bushes from the entire Campbelltown property, services supplied by the Small Farm Contracting property management team. Removal by chainsaw, cutting, chemical pasting and piling where possible. Followed by rabbit & fox control program -gassing of all visible rabbit and fox burrows. We have enjoyed providing our tailor-made services for your property clean-up program and look forward to continuing to assist in the development of your properties. Kind regards, Graham Hewitt Operational Manager.	$11,620.40	NT

Auth	Date 26/4/19
Marshall Dennis	
Co/Bus Number 40	Amount $11,620.40
GL Code 950/8935	

SIGN HERE

Payment by Cheque to Postal Address or Electronic Funds Transfer (EFT)
*****PLEASE NOTE: NEW BANK DETAILS BELOW*****

EFT DETAILS:
Account Name: Small Farm Contracting
Bank: Bendigo Bank
BSB: 633-108
ACCOUNT NUMBER 1559 - 95590

GST:	$0.00
Total Inc GST:	$11,620.40
Amount Applied:	$0.00
Balance Due:	$11,620.40

Appendix 5: Written notification that Condition 15 no longer applies

From: Ruth Crabb <email address redacted >
Sent: Wednesday, 28 November 2018 11:11 AM
To: Tess Trewin < email address redacted >
Cc: Hagen Ganahl < email address redacted >
Subject: RE: EPBC 2011/6063 Burnside Development Modeina [SEC=UNCLASSIFIED]

Hi Tess,

Thank you for your email, and apologies for the delay in responding.

Condition 17 of EPBC approval 2011/6063 is intended to apply if condition 15 cannot be met in full. The Alternative Offset Strategy approved on 9 November 2018 sets out adequate compensation for impacts to Spiny Rice-Flower plants within Project Areas C1 and D, through the provision of direct offsets within the Cressy offset property. The Offset Management Plan for the Cressy property was also approved on 9 November 2018, and contains the necessary direct environmental offsets for impacts within Project Areas C1, C2 and D.

It is the Department's view that condition 17 is satisfied by the attached approval letter, as the Alternative Offset Strategy and Cressy Offset Management Plan for Project Areas C1, C2 and D would not have been approved against this condition had DFC not tabled the inability to meet the requirements of condition 15 in terms of the Spiny Rice-Flower Propagation Project.

I have also spoken with the Office of Compliance regarding this matter, and they have recommended that you retain and attach this email to your annual compliance report so that documentation is obvious.

Kind regards,

Ruth Crabb
Senior Project Officer
Post Approvals Section
Assessments (WA, SA, NT) and Post Approvals Branch
Environment Standards Division
Department of the Environment and Energy

Appendix 6: Acknowledgement of commencement of action

Australian Government

Department of the Environment and Energy

Our reference: 2011/6063

Contact Officer: Keith Horwood
Telephone: (02) 6274 1933
Email: epbcmonitoring@environment.gov.au

Mr Mal Wright
Senior Ecologist
Brett Lane & Associates Pty Ltd
PO Box 337
CAMBERWELL VIC 3124

Dear Mr Wright

Commencement of the Action, Burnside Development – The Point, VIC, EPBC 2011/6063

I am writing to you about the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) approval 2011/6063.

In accordance with the condition 19, you were required to notify the Department of the action's commencement date. Thank you for notifying the Department that the action commenced on 9 October 2017. Because the action commenced on this date, please complete the following tasks in accordance with the approval conditions by the mentioned due dates.

Condition 21 - Annual Compliance Report

The Annual Compliance Report for the period 9 October 2017 to 8 October 2018 must be published and submitted to the Department before 9 January 2019. The Annual Compliance Report must continue to be published and submitted to the Department until the expiry of the project 31 February 2035.

Please email the Annual Compliance Report, and the details of its publication, to epbcmonitoring@environment.gov.au

Please maintain accurate records of all activities associated with, or relevant to, the approval conditions so that they can be made available to the Department on request. These documents may be subject to audit and be used to verify compliance. Summaries of audits may be published by the Department.

For information about the Monitoring and Audit program, see the Department's website at http://www.environment.gov.au/topics/about-us/legislation/environment-protection-and-biodiversity-conservation-act-1999/complian-2

If you would like to discuss this matter further, please contact Keith Horwood on (02) 6274 1933.

Yours sincerely

Shonelle Meagher
Assistant Director
Environmental Audit Section
Office of Compliance

13 October 2017

Appendix 7: Weed survey reports

Weed Management Summary

Modeina Estate

Date: 22/11/2019

Submitted by Charles Pinnuck

Australian Ecosystems Pty Ltd

Phone: 0448 204 022

Email: charlesp@australianecosystems.com.au

Contents

1.0 Introduction 2
2.0 Weeds Surveyed 2
3.0 Survey Methodology 3
3.1 Woody weeds 3
3.2 Herbs and Grass weeds 3
4.0 Summary of Surveyed Weed Coverage 4
5.0 Detailed Weed Coverage Levels 5

1.0 Introduction

Australian Ecosystems (AE) has prepared this report for Dennis Family Corporation (Project Management) Pty Ltd. This report summarises the results of weed survey's conducted since December 2018 and interpolates weed coverage for April 2019 when records were not kept.

2.0 Weeds Surveyed

This survey has captured three weed species:

- African Boxthorn *(Lycium ferocissimum)*
- Artichoke Thistle (*Cynara cardunculus)*
- Spear Thistle *(Cirsium vulgare)*
- Bridal Creeper *(Asparagus asparagodies)*
- Cape weed (*Arctotheca calendula)*
- Century Plant *(Agave Americana)*
- Fennel *(Foeniculum vulgare)*
- Galenia *(Galenia pubescens)*
- Horehound *(Marrubim vulgare)*
- Paterson's Curse *(Echium plantagineum)*
- Prickly Pear *(Opuntia spp.)*
- Sweet Briar *(Rosa rubiginosa)*
- Chilean Needle Grass *Nassella neesiana)*
- Toowoomba canary grass *(Phalaris aqatica)*
- Serrated Tussock *(Nassella trichotoma)*

Determined by:

The weeds detailed within this report have been captured from the Modeina Weed Management Strategy that Greening Australia prepared in 2017. Only species that are widespread and/or have a high level of risk have been chosen to be controlled within these areas.

3.0 Survey Methodology

3.1 Woody weeds

Woody weeds are classified as African Boxthorn *(Lycium ferocissimum)*, Century Plant *(Agave Americana),* Fennel *(Foeniculum vulgare),* Prickly Pear *(Opuntia spp.)* and Sweet Briar *(Rosa rubiginosa)*.

All species had an extremely low abundance. These species' were individually counted. Hence, the data shows 0% or 1% coverage across all zone.

3.2 Herbs and Grass weeds

Herb and grass weeds are Artichoke Thistle (*Cynara cardunculus)*, Scotch Thistle *(Onopordum acanthium),* Spear Thistle *(Cirsium vulgare),* Bridal Creeper *(Asparagus asparagodies),* Cape weed (*Arctotheca calendula),* Galenia *(Galenia pubescens),* Horehound *(Marrubim vulgare),* Paterson's Curse *(Echium plantagineum),* Chilean Needle Grass *Nassella neesiana),* Toowoomba canary grass *(Phalaris aqatica)* and Serrated Tussock *(Nassella trichotoma)*

These species were surveyed by the method of random quadrat sampling. In each zone, four 5m x 5m quadrats were used to measure the percentage cover of the species. These results were then extrapolated to obtain a percentage cover across each zone.

4.0 Summary of Surveyed Weed Coverage

Date	Average Weed Coverage (%)				
	December 2018	April 2019	July 2019	October 2019	Trendline
African Boxthorn	0.7	0.8	0.9	0.4	
Century Plant	0.2	0.2	0.1	0.1	
Fennel	0.5	0.5	0.4	0.4	
Prickly Pear	0.8	1.0	1.1	0.4	
Sweet Briar	0.7	0.7	0.7	0.6	
Bridal Creeper	1.8	1.3	0.9	0.7	
Chilean Needle Grass	1.7	2.2	2.7	1.3	
Artichoke Thistle	7.0	8.9	10.9	14.4	
Galenia	7.8	4.7	1.6	2.1	
Horehound	2.5	1.6	0.7	0.4	
Paterson's Curse	3.0	2.5	2.0	2.6	
Capeweed	2.3	1.8	1.3	1.9	
Serrated Tussock	16.7	15.8	15.0	4.3	
Spear Thistle	7.5	4.8	2.0	2.4	
Toowoomba canary grass	12.8	13.0	13.1	4.0	
Overall coverage	71	60	53	36	

5.0 Detailed Weed Coverage Levels

December 2018 Weed Survey

MgtZone	African Boxthorn	Century Plant	Fennel	Prickly Pear	Sweet Briar	Bridal Creeper	Chilean Needle Grass	Artichoke Thistle	Galenia	Horehound	Paterson's Curse	Cape weed	Serrated Tussock	Spear Thistle	Toowoomba canary grass	Weed coverage (%)
1A	0	0	0	1	1	0	0	2	5	2	5	1	5	5	1	33
1B	0	0	0	0	0	5	2	10	5	2	2	2	15	5	20	73
2	1	1	0	1	1	0	2	10	15	2	5	5	15	10	1	74
3	1	0	1	1	0	2	2	5	5	5	2	2	30	5	30	96
4	1	0	1	1	1	2	2	10	10	2	2	2	15	10	10	74
5	1	0	1	1	1	2	2	5	7	2	2	2	20	10	15	76
Average	0.7	0.2	0.5	0.8	0.7	1.8	1.7	7.0	7.8	2.5	3.0	2.3	16.7	7.5	12.8	**71**

April 2019 interpolated weed levels

MgtZone	African Boxthorn	Century Plant	Fennel	Prickly Pear	Sweet Briar	Bridal Creeper	Chilean Needle Grass	Artichoke Thistle	Galenia	Horehound	Paterson's Curse	Cape weed	Serrated Tussock	Spear Thistle	Toowoomba canary grass	Weed coverage (%)
1A	0	0	0	1	1	0	0	2	3	1	4	1	5	3	1	21
1B	0	0	0	0	0	3	2	8	4	2	2	2	23	4	25	71
2	2	1	0	1	1	0	2	13	9	1	5	4	13	6	1	56
3	1	0	1	2	1	2	4	10	3	3	2	2	25	3	25	82
4	1	0	1	1	1	2	2	15	6	2	2	2	18	8	8	67
5	1	0	1	2	1	2	2	5	5	2	2	2	13	6	15	56
DZ	1	0	0	1	1	1	6	11	4	2	2	1	16	5	16	67
Average	0.8	0.2	0.5	1.0	0.7	1.3	2.2	8.9	4.7	1.6	2.5	1.8	15.8	4.8	13.0	**60**

July 2019 Weed Survey

MgtZone	African Boxthorn	Century Plant	Fennel	Prickly Pear	Sweet Briar	Bridal Creeper	Chilean Needle Grass	Artichoke Thistle	Galenia	Horehound	Paterson's Curse	Cape weed	Serrated Tussock	Spear Thistle	Toowoomba canary grass	Weed coverage (%)
1A	0	0	0	1	0	0	0	1	1	0	2	1	5	1	1	13
1B	0	0	0	0	0	1	1	5	2	1	1	1	30	2	30	74
2	2	1	0	1	1	0	1	15	2	0	5	2	10	2	1	43
3	1	0	1	2	1	2	5	15	1	1	1	1	20	1	20	72
4	1	0	1	1	1	2	1	20	2	1	2	2	20	5	5	64
5	1	0	1	2	1	1	1	5	2	1	2	2	5	1	15	40
DZ	1	0	0	1	1	0	10	15	1	1	1	0	15	2	20	68
Average	0.9	0.1	0.4	1.1	0.7	0.9	2.7	10.9	1.6	0.7	2.0	1.3	15.0	2.0	13.1	**53**

October 2019 Weed Survey

MgtZone	African Boxthorn	Century Plant	Fennel	Prickly Pear	Sweet Briar	Bridal Creeper	Chilean Needle Grass	Artichoke Thistle	Galenia	Horehound	Paterson's Curse	Cape weed	Serrated Tussock	Spear Thistle	Toowoomba canary grass	Weed coverage (%)
1A	0	0	0	0	0	1	0	1	5	0	5	5	0	5	0	22
1B	0	0	0	0	0	1	1	10	1	0	1	1	5	2	10	32
2	0	1	0	0	1	0	0	15	5	0	5	2	5	2	1	37
3	0	0	1	1	1	1	2	20	1	1	1	1	5	1	5	41
4	1	0	1	1	1	1	0	20	1	1	2	2	5	5	2	43
5	1	0	1	1	1	1	1	10	1	1	2	2	0	1	5	28
DZ	1	0	0	0	0	0	5	25	1	0	2	0	10	1	5	50
Average	0.4	0.1	0.4	0.4	0.6	0.7	1.3	14.4	2.1	0.4	2.6	1.9	4.3	2.4	4.0	**36**

Weed Survey Report

Modeina Estate - Phase 2 -

Date: 31/10/2019

Submitted by Callum Low

Australian Ecosystems Pty Ltd

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Contents

1.0 Introduction 3
2.0 Weeds Surveyed 3
3.0 Survey Methodology 3
3.1 Woody weeds 3
3.2 Herbs and Grass weeds 4
4.0 Details of Surveyed Weeds 5
4.1 African Boxthorn - Lycium ferocissimum 5
4.2 Artichoke Thistle - Cynara cardunculus 6
4.4 Spear Thistle - Cirsium vulgare 7
4.5 Bridal Creeper - Asparagus asparagodies 8
4.6 Cape weed - Arctotheca calendula 9
4.7 Century Plant - Agave Americana 10
4.8 Fennel - Foeniculum vulgare 11
4.9 Galenia - Galenia pubescens 12
4.10 Horehound - Marrubim vulgare 13
4.11 Paterson's Curse - Echium plantagineum 14
4.12 Prickly Pear - Opuntia spp. 15
4.13 Sweet Briar - Rosa rubiginosa 16
4. 14 Chilean Needle Grass - Nassella neesiana 17
4.15 Toowoomba canary grass - Phalaris aqatica 18
4.16 Serrated Tussock - Nassella trichotoma 19
6.0 Summary 20
6.1 Overview 20
6.1 Zone 1A 20
6.2 Zone 2 20
6.3 Zone 4 21
6.4 Zone 5 21
6.5 Zone 3 21
6.5 Zone 1B 21
6.7 Development zone 22
7.0 Conclusion 22

1.0 Introduction

Australian Ecosystems (AE) has prepared this report for Dennis Family Corporation (Project Management) Pty Ltd. This report details the results of weed survey's conducted in mid October 2019 within the area described as 'Stage 2 Modeina'. This report should be read in conjunction with, 'Modeina Weed Management Strategy' that Greening Australia prepared in 2017.

2.0 Weeds Surveyed

This survey has captured these weed species listed below:

- African Boxthorn *(Lycium ferocissimum)*
- Artichoke Thistle (*Cynara cardunculus)*
- Spear Thistle *(Cirsium vulgare)*
- Bridal Creeper *(Asparagus asparagodies)*
- Cape weed (*Arctotheca calendula)*
- Century Plant *(Agave Americana)*
- Fennel *(Foeniculum vulgare)*
- Galenia *(Galenia pubescens)*
- Horehound *(Marrubim vulgare)*
- Paterson's Curse *(Echium plantagineum)*
- Prickly Pear *(Opuntia spp.)*
- Sweet Briar *(Rosa rubiginosa)*
- Chilean Needle Grass *Nassella neesiana)*
- Toowoomba canary grass *(Phalaris aqatica)*
- Serrated Tussock *(Nassella trichotoma)*

Determined by:

The weeds detailed within this report have been taken from the Modeina Weed Management Strategy that Greening Australia prepared in 2017. Only species that are widespread and/or have a high level of risk have been chosen to be controlled within these areas.

3.0 Survey Methodology

3.1 Woody weeds

Woody weeds are classified as African Boxthorn *(Lycium ferocissimum)*, Century Plant *(Agave Americana),* Fennel *(Foeniculum vulgare),* Prickly Pear *(Opuntia spp.)* and Sweet Briar *(Rosa rubiginosa)*.

All species had an extremely low abundance. These species' were individually counted. Hence, the data shows 0% or 1% coverage across all zones.

3.2 Herbs and Grass weeds

Herb and grass weeds are present across all zone. These weeds include Artichoke Thistle (*Cynara cardunculus)*, Scotch Thistle *(Onopordum acanthium),* Spear Thistle *(Cirsium vulgare),* Bridal Creeper *(Asparagus asparagodies),* Cape weed (*Arctotheca calendula),* Galenia *(Galenia pubescens),* Horehound *(Marrubim vulgare),* Paterson's Curse *(Echium plantagineum),* Chilean Needle Grass *Nassella neesiana),* Toowoomba canary grass *(Phalaris aqatica)* and Serrated Tussock *(Nassella trichotoma)*

The above mentioned species were surveyed using the Random Quadrant Sampling Method. Within each zone, Four (4) 5 meter X 5 meter quadrants were used to measure the current number of weed species present and then converted to a percentage cover. The results from these quadrants were then extrapolated to obtain a percentage cover across each of the zones. The results of these surveys are displayed over the following pages of the report.

4.0 Details of Surveyed Weeds

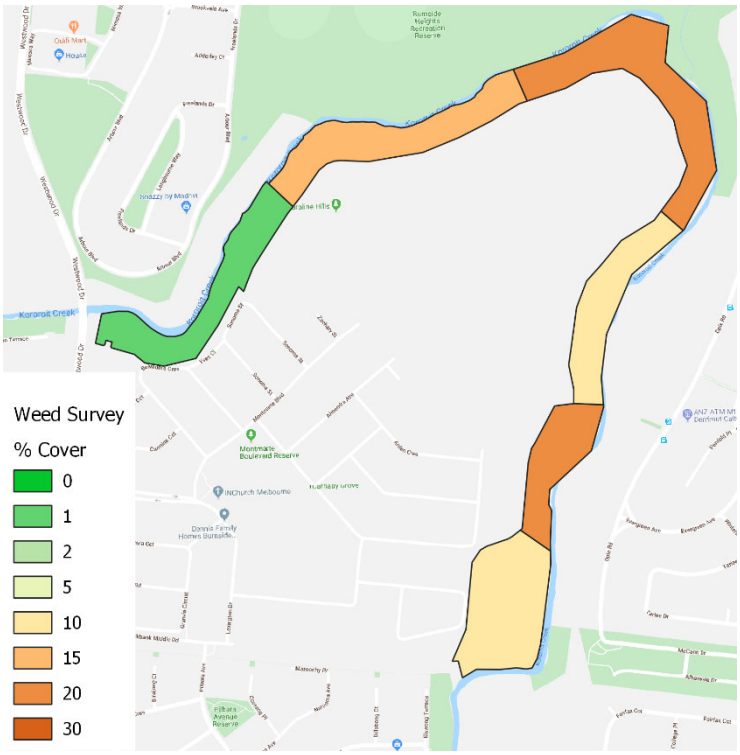
4.1 African Boxthorn - Lycium ferocissimum

Regionally Controlled & Weed of National Significance **Target coverage <1%**

Current coverage

MgtZone	1A	2	4	5	3	1B	DZ
Oct 2019	0	0	1%	1%	0	0	1%
July 2019	0	1%	1%	1%	1%	0	1%
Dec 2018	0	1%	1%	1%	1%	0	1%

African boxthorn is a rounded, woody, densely branched and very thorny large shrub up to 5 metres high. African boxthorn reproduces exclusively by seed which is commonly eaten by birds, seed is viable when excreted. These plants are often found near places where birds have perched such as trees, poles and powerlines. It was widely planted as a hedge plant before its weedy potential was realised. Spread also occurs from contaminated produce and materials. African boxthorn is a fast-growing invasive species that, if untreated, spreads quickly. Seeds may germinate year-round and early root growth is rapid, ensuring young plants are competitive. Plants take at least two years to flower, producing flowers and fruit mostly in summer. Some flowering and fruit production occurs at other times of year. Sometimes deciduous in winter, with new leaves and active growth in spring. Broken roots and cut stumps can sprout regrowth.



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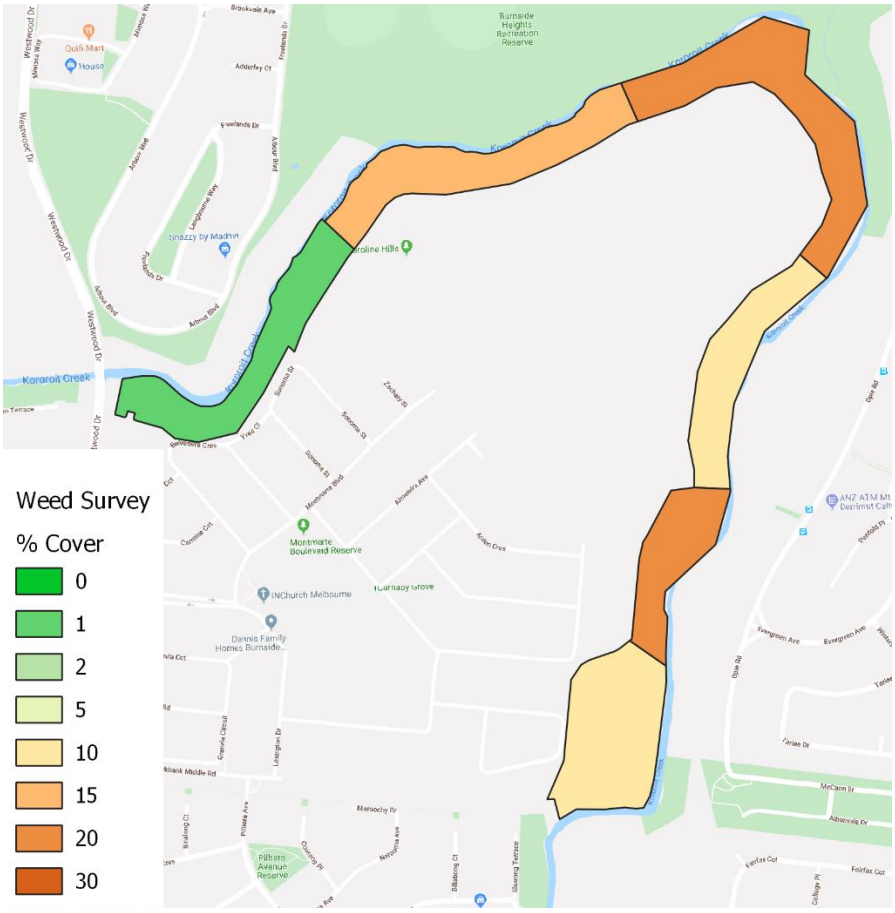
4.2 Artichoke Thistle - Cynara cardunculus

Regionally Controlled **Target coverage < 5%**

Current coverage

MgtZone	1A	2	4	5	3	1B	DZ
Oct 2019	1%	15%	20%	10%	10%	10%	25%
July 2019	1%	15%	20%	5%	15%	5%	15%
Dec 2018	2%	10%	10%	5%	10%	10%	15%

A perennial or biennial spiny thistle with annual tops and a cluster of large bright purple flowers that are 5-8 cm in diameter during summer. The mature plant is erect, with stems 1- 2 m tall arising from a bushy rosette up to 2 m wide and tall. The stem is strongly ribbed and covered with downy grey hairs and usually single at the base and branched towards the top. The large, grey green leaves are deeply lobed and spiny with woolly hairs underneath.



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4.4 Spear Thistle - Cirsium vulgare

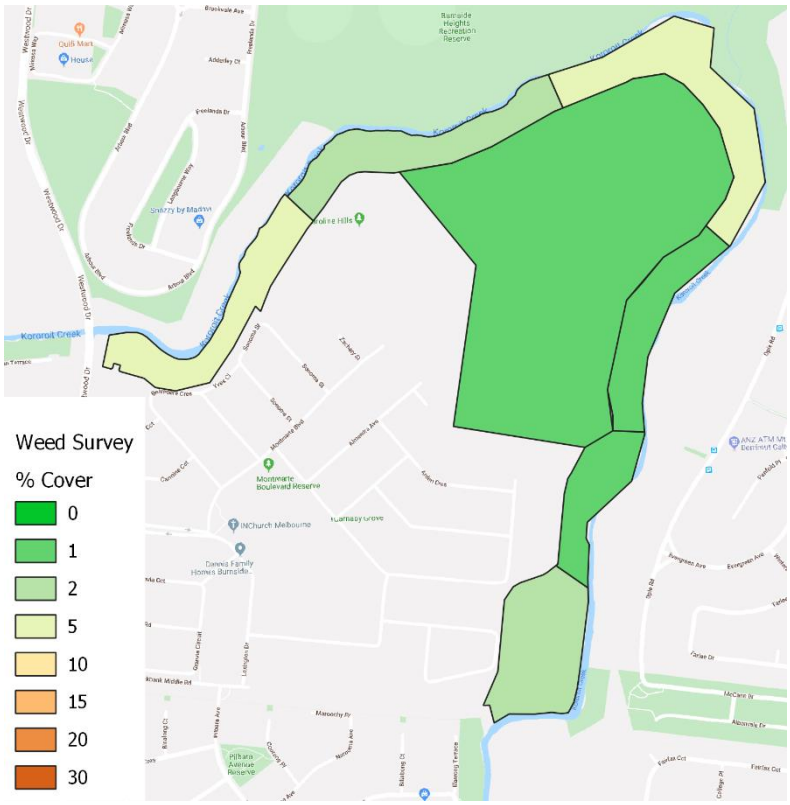
Regionally Controlled Weeds ***Target coverage <5%***

Current coverage

MgtZone	1A	2	4	5	3	1B	DZ
Oct 2019	5%	2%	5%	1%	1%	2%	1%
July 2019	1%	2%	5%	1%	1%	2%	2%
Dec 2018	5%	10%	10%	10%	5%	5%	2%

An annual or short-term perennial herb with erect growth to 1.5 m tall. Stems have spiny wings and are cobwebby. Upper leaf surface is dark green and rough while the lower surface is white with short matted hairs.

A common species of wet or summer-moist land, including swamps, depressions, drains, waste-land, pastures and cultivated soils. Prefers open, non-shaded environments, heavy textured soils and good fertility.



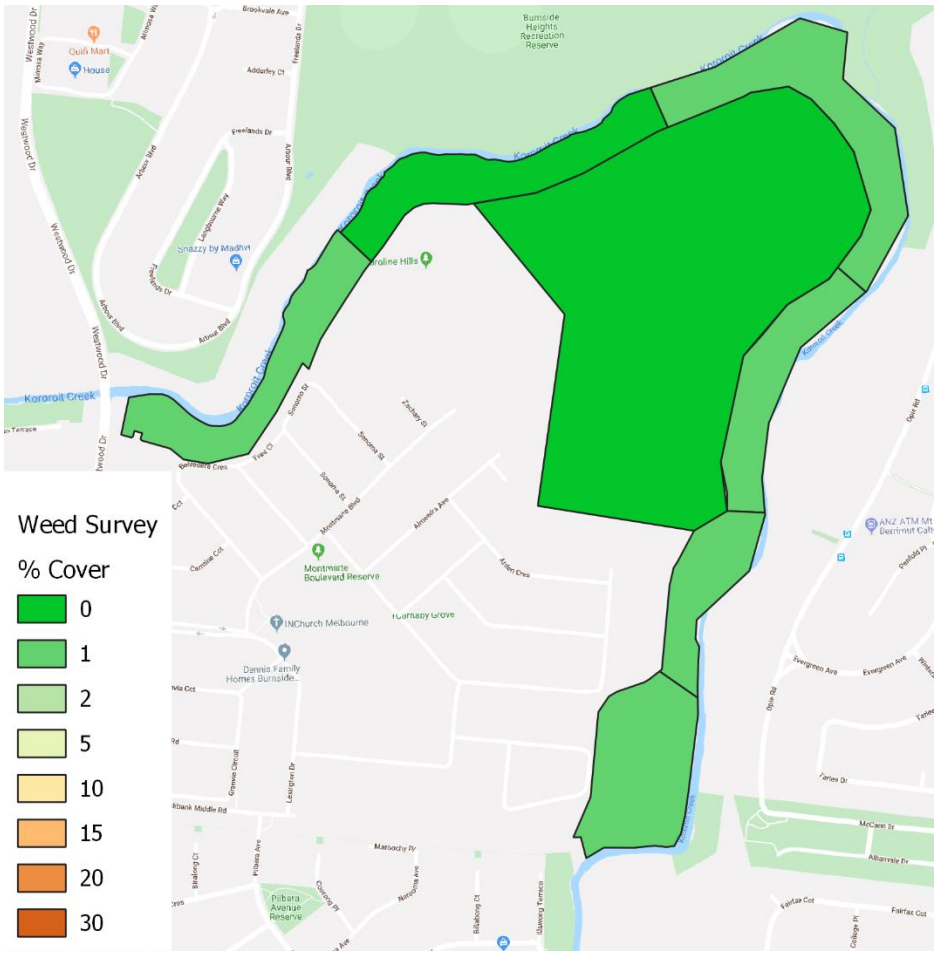
4.5 Bridal Creeper - Asparagus asparagodies

Regionally Controlled - Weed of National Significance **Target coverage < 1%**

Current Coverage

MgtZone	1A	2	4	5	3	1B	DZ
Oct 2019	1%	0%	1%	1%	1%	1%	0%
July 2019	0%	0%	2%	1%	2%	1%	0%
Dec 2018	0%	0%	2%	2%	5%	5%	0%

It is regarded as one of the worst weeds in Australia because of its invasiveness, potential for spread, and economic and environmental impacts. Bridal creeper entered the country as a garden plant and is now a major weed of bushland in southern Australia, where its climbing stems and foliage smother native plants. It forms a thick mat of underground tubers which impedes the root growth of other plants and often prevents seedling establishment. Rare native plants, such as the rice flower Pimelea spicata, are threatened with extinction by bridal creeper.



4.6 Cape weed - Arctotheca calendula

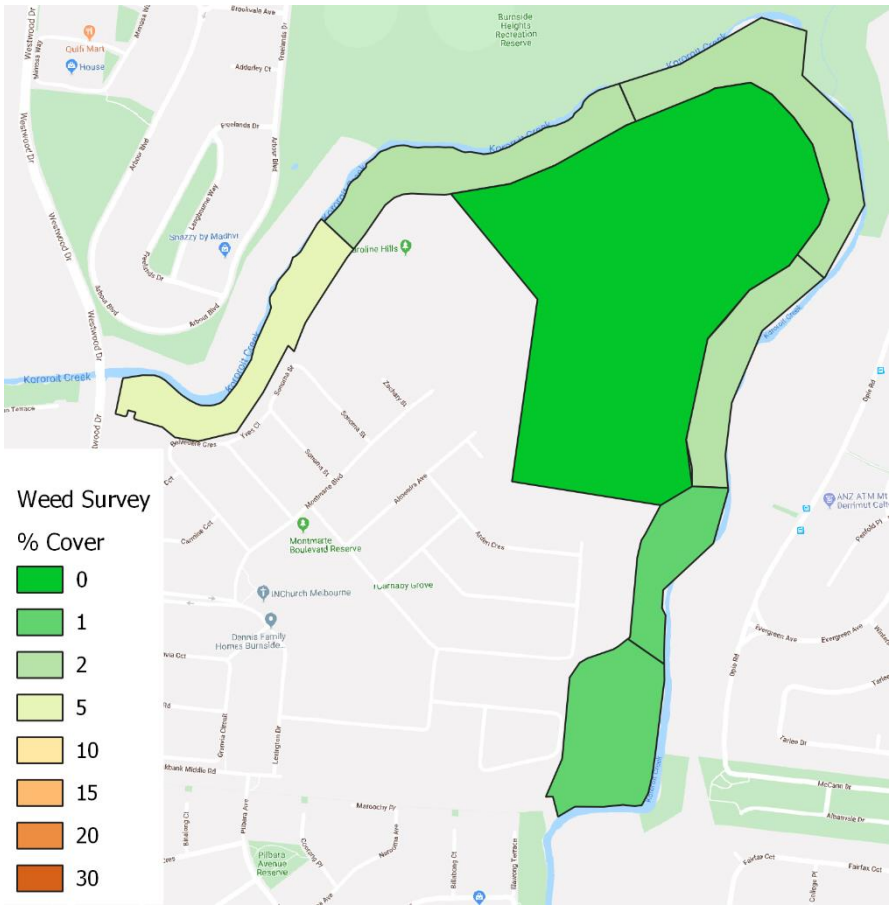
Not declared or considered noxious **Target coverage < 5%**

Current Coverage

MgtZone	1A	2	4	5	3	1B	DZ
Oct 2019	5%	2%	2%	2%	1%	1%	0%
July 2019	1%	2%	2%	2%	1%	1%	0%
Dec 2018	1%	5%	2%	2%	2%	2%	0%

This plant is widespread and common weed in pastures, lawns, cultivation and waste areas across Victoria. Typically a plant of fresh-water habitats but may occur on the fringes of saline swamps and flats during wetter periods.

It is stemless or shortly stemmed, herb, 80 cm wide and 30 cm high, with a taproot and a basal rosette of leaves. Leaves are 5-25 cm long and 2-6 cm wide.



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4.7 Century Plant - Agave Americana

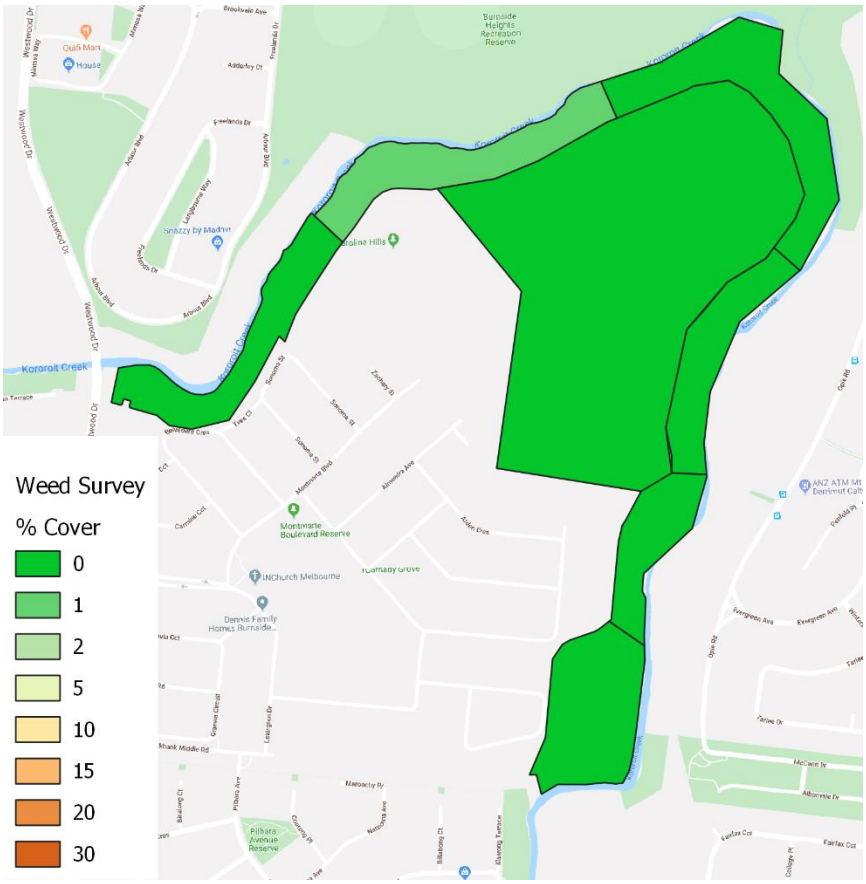
Not declared or considered noxious **Target coverage < 1%**

Current Coverage

MgtZone	1A	2	4	5	3	1B	DZ
Oct 2019	0%	1%	0%	0%	0%	0%	0%
July 2019	0%	1%	0%	0%	0%	0%	0%
Dec 2018	0%	1%	0%	0%	0%	0%	0%

A very large and long-lived rosette-forming plant, growing 1-2 m high and 2-4 m across.

Older individuals may sometimes develop a short woody stem at the base of the plant and commonly produces numerous suckers which form a large clump or colony. When fully mature this plant will develops a massive flower cluster on a robust flowering stem 6-12 m tall.



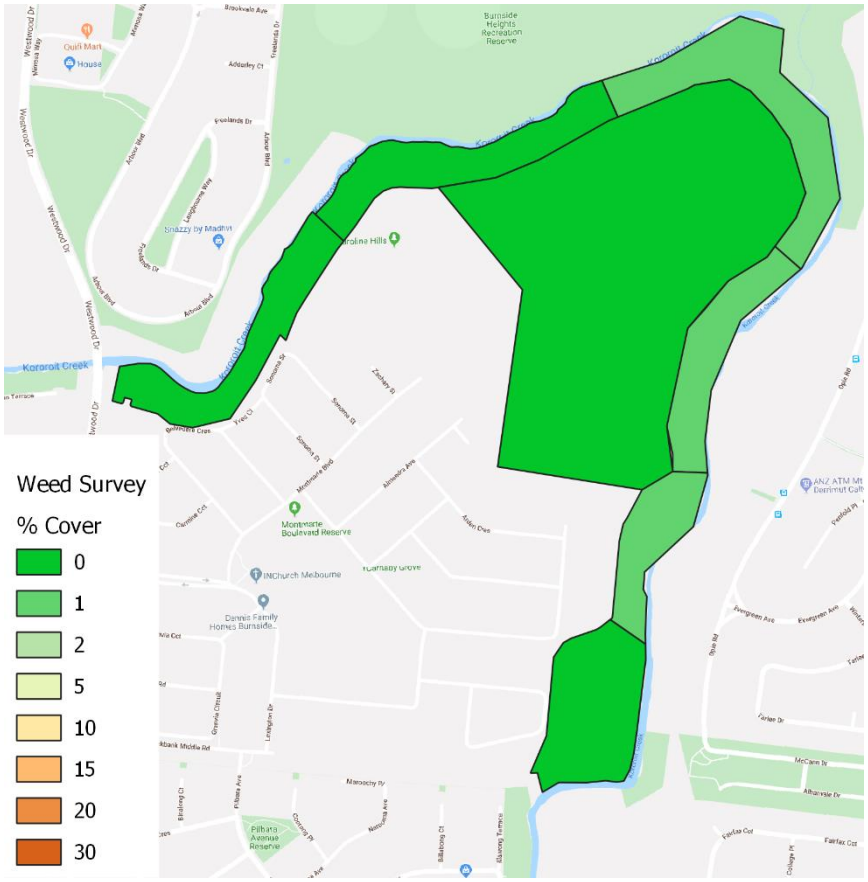
4.8 Fennel - Foeniculum vulgare

***Restricted Weeds* noxious** **Target coverage < 1%**

Current Coverage

MgtZone	1A	2	4	5	3	1B	DZ
Oct 2019	0%	0%	1%	1%	1%	0%	0%
July 2019	0%	0%	1%	1%	1%	0%	0%
Dec 2018	0%	0%	1%	1%	1%	0%	0%

An erect multi-stemmed perennial herb commonly 1.5 to 2.0 metres high. It is found along waterways, drainage lines and in seasonally moist locations within grasslands and woodlands. Dense infestations may restrict access to waterways. A soft, herbaceous plant the high growth of the plant may be a nuisance to people



4.9 Galenia - Galenia pubescens

Not declared or considered noxious **Target coverage < 5%**

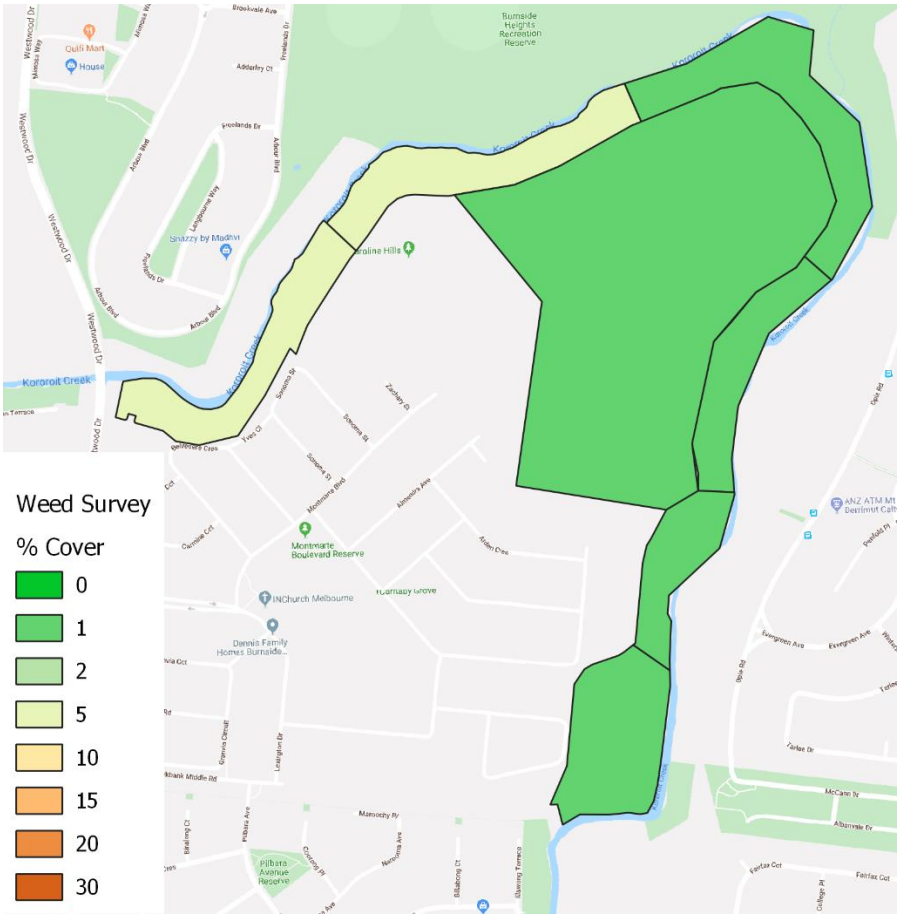
Current Coverage

MgtZone	1A	2	4	5	3	1B	DZ
Oct 2019	5%	5%	1%	1%	1%	1%	1%
July 2019	1%	2%	2%	2%	1%	2%	1%
Dec 2018	5%	15%	10%	5%	10%	10%	1%

This perennial creeping, herbaceous plant growing to about 60 cm high and 1–2 m wide.

It is deep rooted and flowers from late spring to early autumn. Galenia reproduces by seed. Most dispersal of seed occurs by wind, water, birds and livestock. Movement of contaminated soil by vehicles and equipment can also contribute to its spread.

Drought and salt tolerant, galenia grows over and smothers existing vegetation by forming a thick dense mat. It invades coastal dunes, pastures, disturbed areas, lawns, roadsides and rocky outcrop vegetation. Galenia is known to produce nitrates that can be toxic to stock.



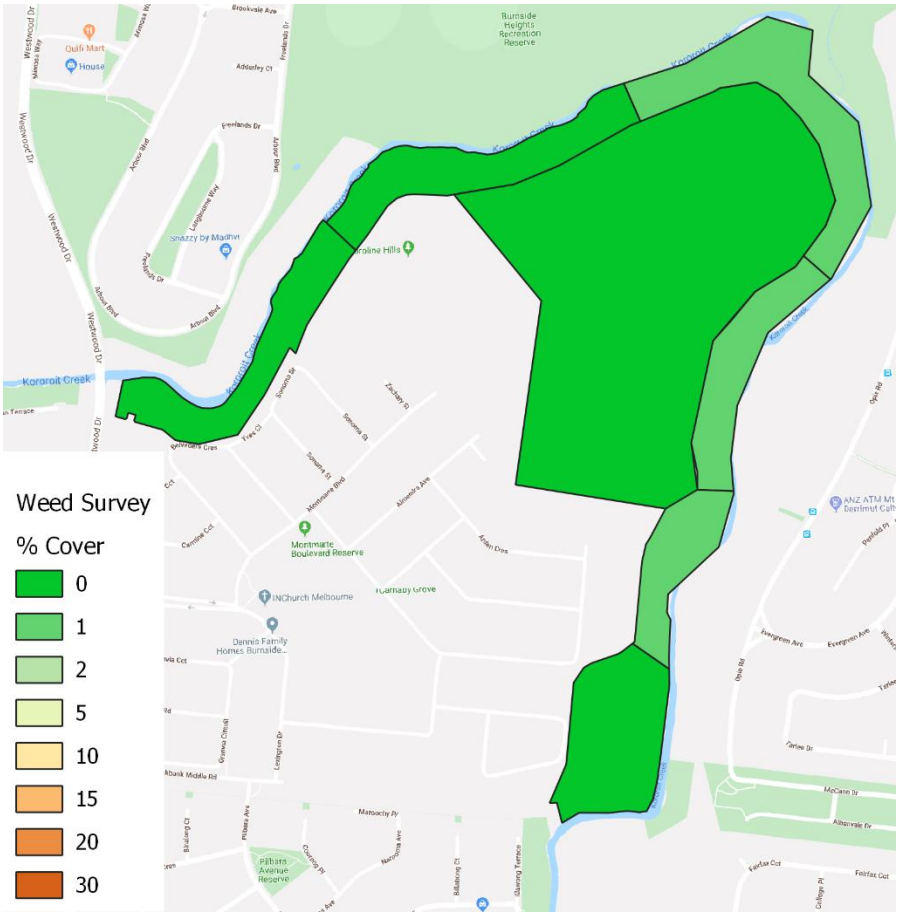
4.10 Horehound - Marrubim vulgare

Not declared or considered noxious **Target coverage <5%**

Current Coverage

MgtZone	1A	2	4	5	3	1B	DZ
Oct 2019	0%	0%	1%	1%	1%	0%	0%
July 2019	0%	0%	1%	1%	1%	1%	1%
Dec 2018	2%	2%	2%	2%	7%	2%	1%

A bushy perennial plant, 30 to 80 cm high, sharply aromatic when crushed, covered with dense whitish hairs. Horehound thrives on poor soil and in waste places. It invades poor pastures which provide little competition. Horehound contains a bitter alkaloid which makes it unpalatable for grazing livestock. As well as being an agricultural weed of pastures horehound has become an important environmental weed because of its ability to invade disturbed native vegetation



4.11 Paterson's Curse - Echium plantagineum

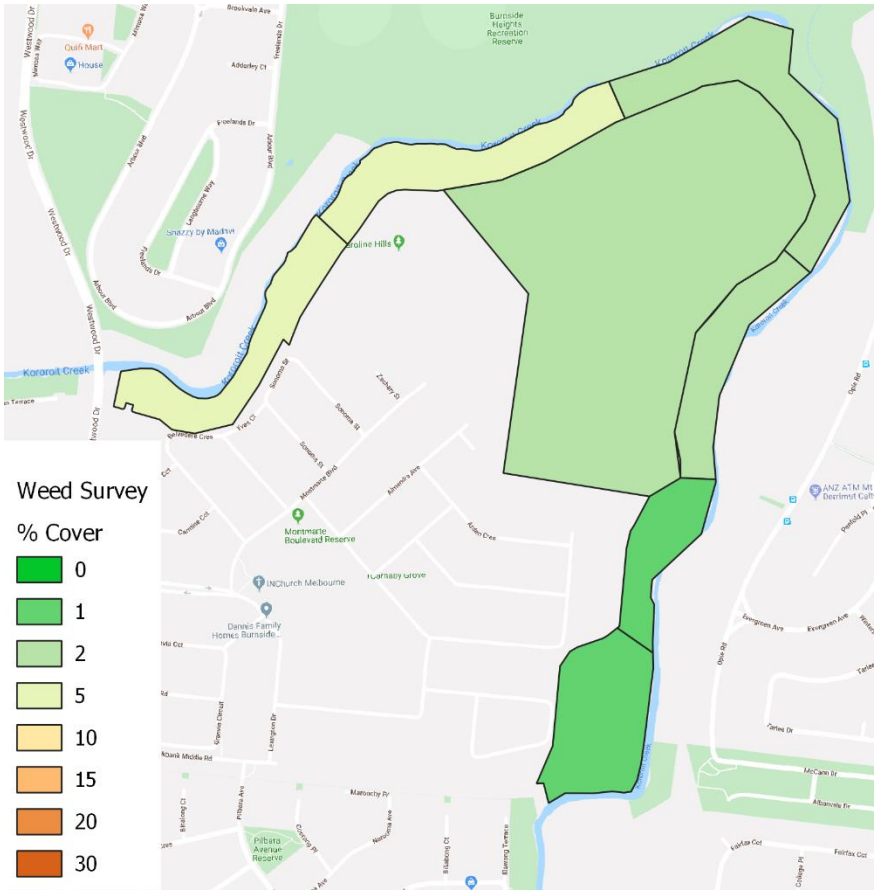
Regionally controlled **Target coverage < 5%**

Current Coverage

MgtZone	1A	2	4	5	3	1B	DZ
Oct 2019	5%	5%	2%	2%	1%	1%	2%
July 2019	2%	5%	2%	2%	1%	1%	1%
Dec 2018	5%	5%	2%	2%	2%	2%	1%

Paterson's curse is an annual, occasionally biennial, herb that grows as a rosette in autumn and winter and produces flowering stalks in spring and early summer. The rosette usually grows parallel to the ground, however the leaves may be erect in dense vegetation.

Plants begin to produce flowering stalks in late winter, commence flowering in early spring and die in summer. The flowers are usually purple but may be blue or pink. The first mature seeds are produced four to six weeks after flowering commences.



4.12 Prickly Pear - Opuntia spp.

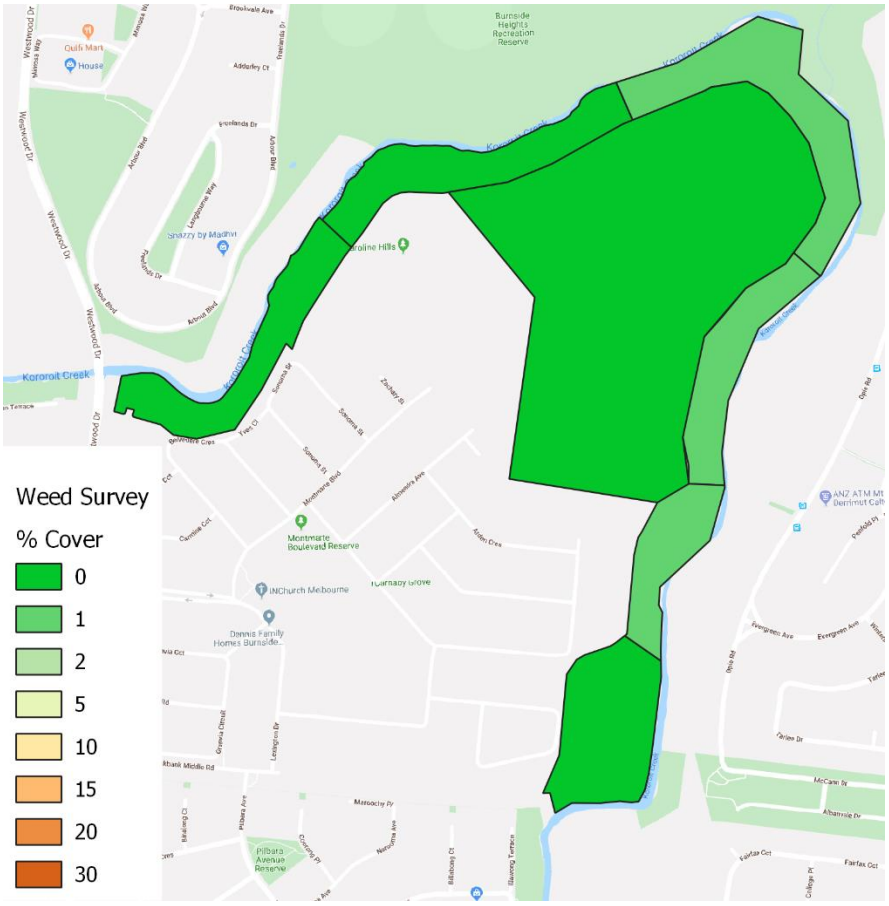
Regionally controlled **Target coverage <5%**

Current Coverage

MgtZone	1A	2	4	5	3	1B	DZ
Oct 2019	0%	0%	1%	1%	1%	0%	0%
July 2019	1%	1%	1%	2%	2%	0%	1%
Dec 2018	1%	1%	1%	1%	1%	0%	1%

Prickly pear is an erect succulent shrub which can grow to a height of 5 m. The stems of prickly pear are commonly grey-green to light green. The plant usually has one main woody stem with dense prickles, which gives way to a number of side branches made up of fleshy segments. The segments are approximately 45 cm long, 15 cm wide and 1-2 cm thick, with the upper segments appearing to droop.

Each plant segment has areoles, which are growing points where new segments, flowers or roots can be produced. Each areole has short tuffs of finely barbed bristles and sometimes one to five sharp, 5 cm long spines. Spines are more common on segments that are older and lower on the plant.



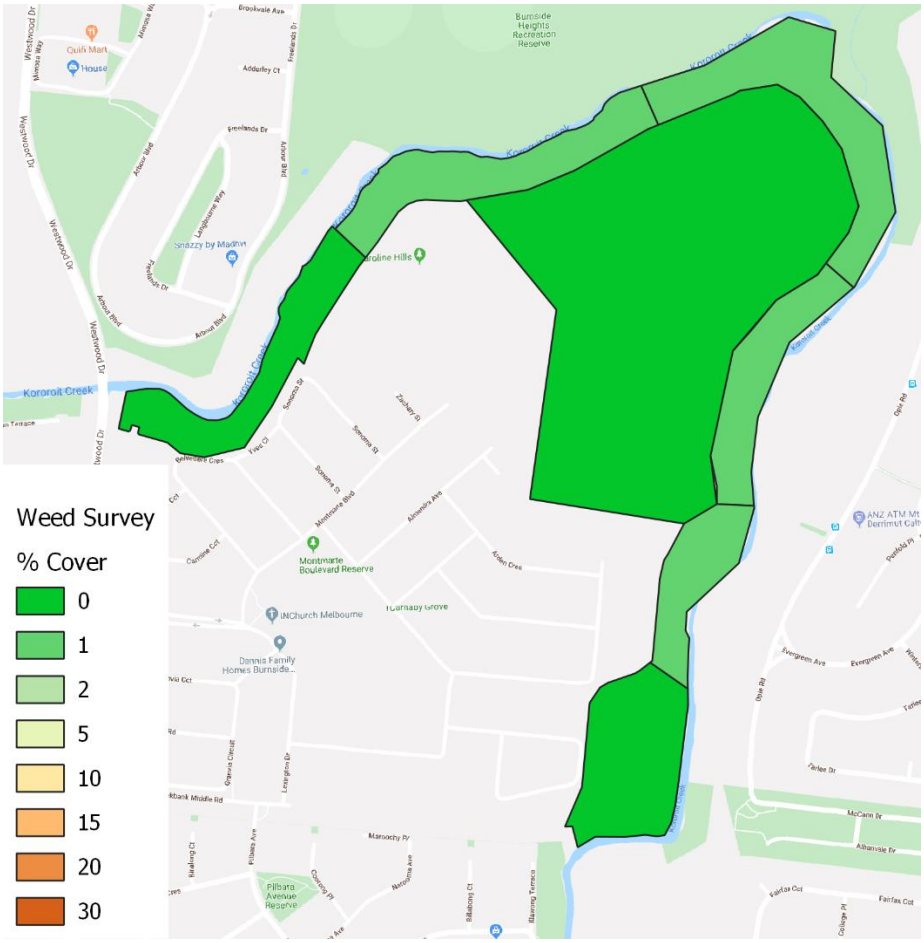
4.13 Sweet Briar - Rosa rubiginosa

Regionally Controlled **Target coverage <1%**

Current Coverage

MgtZone	1A	2	4	5	3	1B	DZ
Oct 2019	0%	1%	1%	1%	1%	0%	0%
July 2019	0%	1%	1%	1%	1%	0%	1%
Dec 2018	1%	1%	1%	1%	1%	0%	1%

Sweet briar is a perennial woody shrub up to 3m tall. The stem is usually many (and can be up to several hundred) stems arising from the rootstock; erect or scrambling, up to 3 metres high, green and smooth to brown and somewhat roughened, woody, branched, spreading and sometimes trailing, heavily covered with down-curved prickles up to 1.5 cm long.



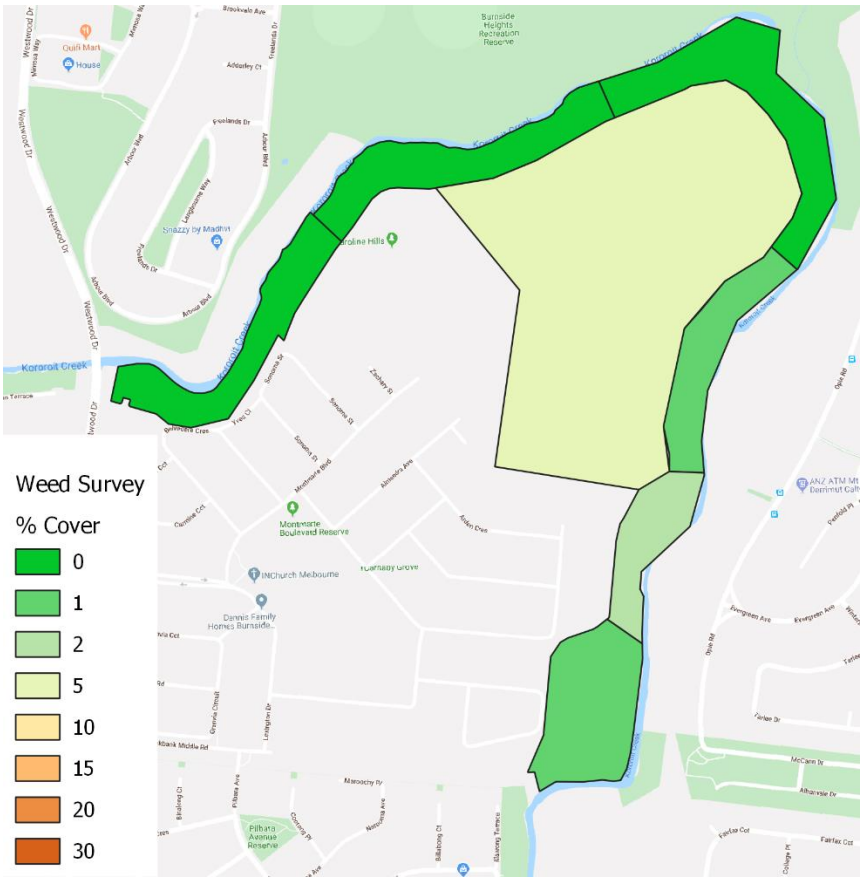
4. 14 Chilean Needle Grass - Nassella neesiana

Regional restricted **Target coverage < 5%**

Current Coverage

MgtZone	1A	2	4	5	3	1B	DZ
Oct 2019	0%	0%	0%	1%	2%	1%	5%
July 2019	0%	1%	1%	1%	5%	1%	10%
Dec 2018	0%	2%	2%	2%	5%	5%	10%

Chilean needle grass is a tussocky perennial in the speargrass group of grasses growing to about 1 m high. It leaves are hairless and are normally grow to 30 cm long and 5 mm wide. With the flowering head being to 40 cm long.



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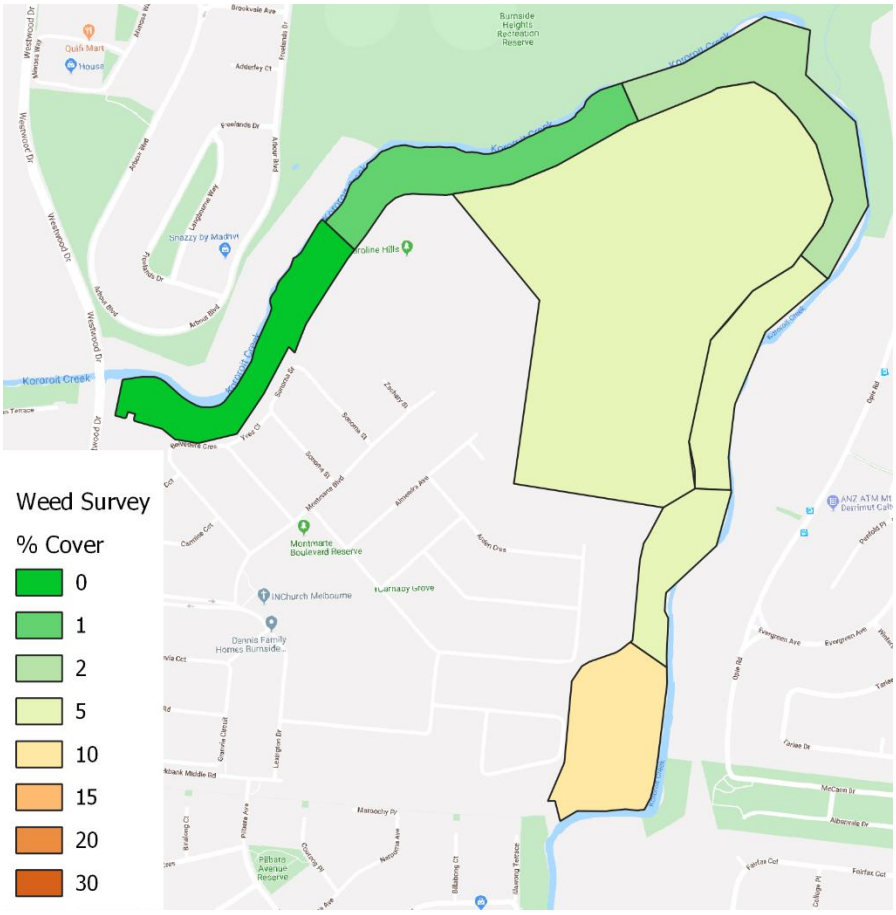
4.15 Toowoomba canary grass - Phalaris aqatica

Not declared and considered noxious **Target coverage < 5%**

Current Coverage

MgtZone	1A	2	4	5	3	1B	DZ
Oct 2019	0%	1%	2%	5%	5%	10%	5%
July 2019	1%	1%	5%	15%	20%	30%	20%
Dec 2018	1%	1%	10%	15%	15%	30%	20%

Widely used as a pasture species where annual rainfall exceeds 450 mm. It prefers fertile, seasonally moist sites. Commonly spreads from pastures, road verges and drainage ditches to adjacent indigenous vegetation. Toowoomba canary grass invades dry coastal vegetation, heathland and heathy woodland, lowland grassland and grassy woodland, dry sclerophyll forest and woodland, damp sclerophyll forest, riparian vegetation and freshwater wetlands.



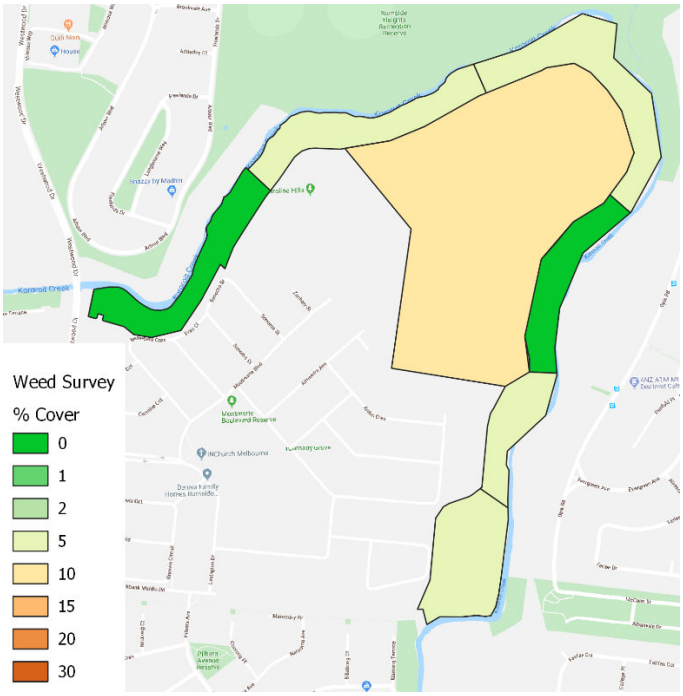
4.16 Serrated Tussock - Nassella trichotoma

Regionally Controlled - *Weed of National Significance* **Target coverage < 5%**

Current Coverage

MgtZone	1A	2	4	5	3	1B	DZ
Oct 2019	0%	5%	5%	0%	5%	5%	5%
July 2019	5%	10%	20%	5%	20%	30%	15%
Dec 2018	5%	15%	15%	15%	20%	30%	15%

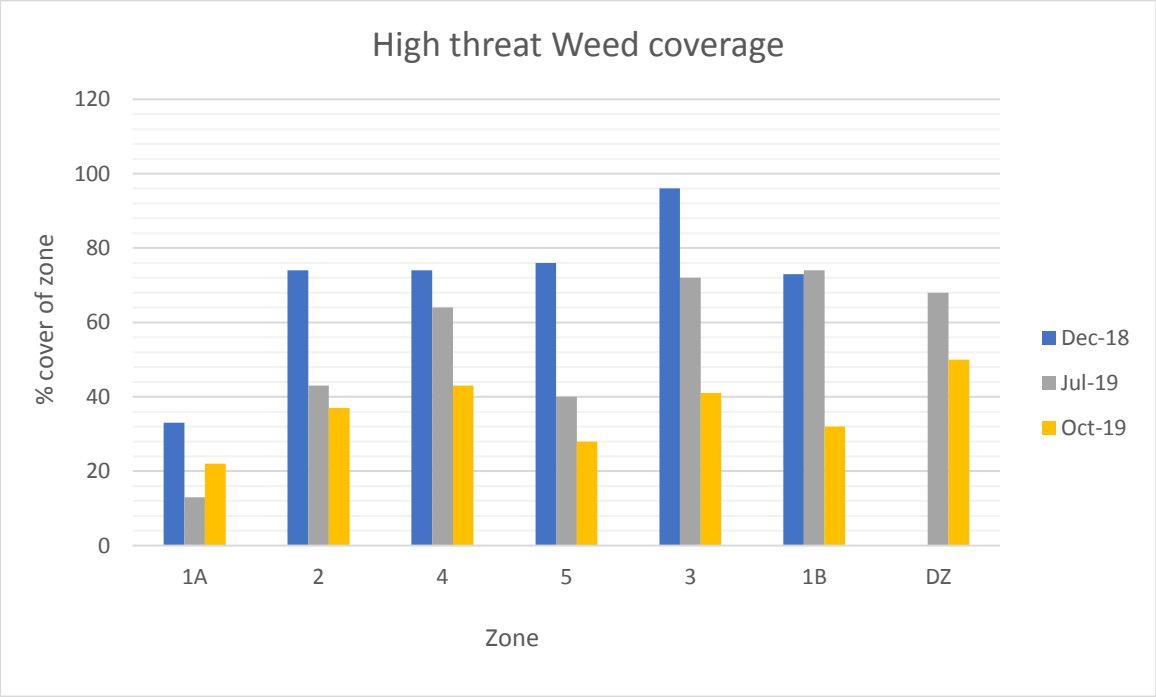
Serrated tussock is a long lived perennial grass growing up to 60cm in height with a base of 25cm in diameter. Plant size varies with soil fertility and location. In infertile conditions plants may only reach a height of 15cm. Serrated tussock is shallow rooted with an extensive network of fibrous roots occurring predominantly in the top 20cm of soil. The roots are dense, wiry and fibrous making serrated tussock very difficult to pull out, even when small. Flowering stems emerge from the base of the plant. They are multi-branched and up to 35cm long. The purple colour of the small seeds produces an overall purplish haze to the serrated tussock seed head. Once the seeds have formed, the entire seed head will 'droop' over the tussock towards the ground. Flowering takes place as early as late winter (August) and will continue throughout the spring (September – November). Autumn flowering has been known to occur. Seeds take 8 – 10 weeks to mature, normally occurring throughout the spring and summer months. Once seeds are ripe, the whole flowing stem detaches from the base of the plant and is dispersed by the wind. Seed is dormant and will not germinate for about 6 months.



6.0 Summary

6.1 Overview

The below table displays the total percentage coverage in each zone of high threat weeds. The general trend across the site, represents a continual decrease in the percentage weed cover. There are two exceptions to this trend, Zone 1A in October, 2019 and Zone 1B in July, 2019. The reasons behind this increase are examined in detail further on in the summary.



6.1 Zone 1A

Low amounts of native vegetation are to be found within zone 1A. Brassica has taken over this area and was controlled this visit. Many other broadleaf weeds such as Galenia, Paterson's Curse and bridal creeper have all recently germinated and have increased their coverage since last visit. It is known that these plants are taking advantage of bare areas in this zone.

The emergence of lower threat weeds such as brassica has occurred in bare areas and was controlled during Octobers visit.

6.2 Zone 2

Brassica has taken over this area were bare soil exists. This plant was controlled this visit. Many other broadleaf weeds such as Galenia, Paterson's Curse and bridal creeper have all recently germinated and increased their coverage since last visit. It is known that these plants are taking advantage of bare areas in this zone

All woody weeds had been controlled with the exception of a cluster of Century Plants still surviving. The small reshooting plants are being successfully controlled. The larger plant has not been affected by herbicide application.

The native vegetation within this zone is surrounded by and interspersed with Serrated Tussock and Artichoke Thistle. These exotic plants have been controlled but weed pressures are on all sides will be an ongoing management issue.

6.3 Zone 4

Weed loads in this zone are decreasing greatly. Weedy Grasses such as Serrated Tussock and Toowoomba Canary Grass have been well controlled. Weeds such as Galenia, Paterson's Curse and bridal creeper tend to germinate quickly in bare areas. They may need to be controlled in upcoming visits.

Brassica was present in this zone and was controlled.

Several reshooting Boxthorns were noted and controlled.

6.4 Zone 5

This zone is dominated by controlled patches of Serrated Tussock and Toowoomba Canary Grass. Many artichoke thistles have germinated in barer areas in this zone along with lower threat weeds such as brassica.

This zone had the highest prevalence of Prickly Pear, with 4 clusters been seen. These plants all showed signs of previous control.

Brassica was present in this zone and was controlled.

Only several reshooting woody weeds were seen and controlled. This is a vast improvement on previous treatments.

6.5 Zone 3

This zone is dominated by controlled patches of Serrated Tussock and Toowoomba Canary Grass. Many artichoke thistles have germinated in barer areas in this zone. The Brassica species has also taken advantage of the bare soil areas. These weeds were controlled during the October, 2019 works.

The Horehound was also seen and controlled this visit.

Several reshooting woody weeds were seen and controlled this visit.

6.5 Zone 1B

Weed loads in this zone are decreasing greatly. This is due to the reduction in coverage of Serrated Tussock and Toowoomba Canary Grass. Brassica and thistle species have taken over the bare spaces.

No woody weeds were recorded.

6.7 Development zone

This area varies greatly with patches dominated by Themeda and other dominated by SerratedTtussock. Weed loads in this zone are decreasing. Mainly due to the reduction in coverage of Serrated Tussock and Toowoomba Canary Grass. Artichoke Thistles are currently the main concern in this zone. With 25% of the area covered in this weed. It is expected that is will greatly decrease next visit has there germination season comes to an end.

Several reshooting woody weeds were seen and controlled this visit.

7.0 Conclusion

In general, the weed populations across all the zones were found to have continued their downward trend, with one exception. The Cynara cardunculus (Artichoke thistle) is still above the target coverage required by the management plan. As of October, 2019, it represented 25% cover within the Development Zone. The reasoning behind this is two fold. The seeds for these plants can remain viable in the soil for up to 5 years. It will germinate readily over the late winter/early spring months and has begun to populate areas where other weed populations have been removed. Continual weed control will be required to gradually reduce the population numbers.

During the October, 2019 weed Control Works, all Brassica weed species were controlled. Prior to the works commencing, it was assessed that this plant was taking advantage of the bare earth created by the previous weed control works. In some areas, this weed had covered approximately 50% of some zones. Given the timing of the works, the plant was treated prior to it setting any viable seed. It will require on going control to reduce the coverage of this weed on site.

Weed Survey Report

Modeina Estate - Phase 2 -

Date: 31/07/2019

Submitted by Callum Low

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Contents

1.0 Introduction 3
2.0 Weeds Surveyed 3
3.0 Survey Methodology 3
3.1 Woody weeds 3
3.2 Herbs and Grass weeds 4
4.0 Details of Surveyed Weeds 5
4.1 African Boxthorn - Lycium ferocissimum 5
4.2 Artichoke Thistle - Cynara cardunculus 6
4.4 Spear Thistle - Cirsium vulgare 7
4.5 Bridal Creeper - Asparagus asparagodies 8
4.6 Cape weed - Arctotheca calendula 9
4.7 Century Plant - Agave Americana 10
4.8 Fennel - Foeniculum vulgare 11
4.9 Galenia - Galenia pubescens 12
4.10 Horehound - Marrubim vulgare 13
4.11 Paterson's Curse - Echium plantagineum 14
4.12 Prickly Pear - Opuntia spp. 15
4.13 Sweet Briar - Rosa rubiginosa 16
4. 14 Chilean Needle Grass - Nassella neesiana 17
4.15 Toowoomba canary grass - Phalaris aqatica 18
4.16 Serrated Tussock - Nassella trichotoma 19
6.0 Summary 20
6.1 Zone 1A 20
6.2 Zone 2 20
6.3 Zone 4 20
6.4 Zone 5 20
6.5 Zone 3 21
6.5 Zone 1B 21

1.0 Introduction

Australian Ecosystems (AE) has prepared this report for Dennis Family Corporation (Project Management) Pty Ltd. This report details the results of weed survey's conducted in Late July 2019 within the area described as 'Stage 2 Modeina'. This report should be read in conjunction with, 'Modeina Weed Management Strategy' that Greening Australia prepared in 2017.

2.0 Weeds Surveyed

This survey has captured three weed species:

- African Boxthorn *(Lycium ferocissimum)*
- Artichoke Thistle (*Cynara cardunculus)*
- Spear Thistle *(Cirsium vulgare)*
- Bridal Creeper *(Asparagus asparagodies)*
- Cape weed (*Arctotheca calendula)*
- Century Plant *(Agave Americana)*
- Fennel *(Foeniculum vulgare)*
- Galenia *(Galenia pubescens)*
- Horehound *(Marrubim vulgare)*
- Paterson's Curse *(Echium plantagineum)*
- Prickly Pear *(Opuntia spp.)*
- Sweet Briar *(Rosa rubiginosa)*
- Chilean Needle Grass *Nassella neesiana)*
- Toowoomba canary grass *(Phalaris aqatica)*
- Serrated Tussock *(Nassella trichotoma)*

Determined by:

The weeds detailed within this report have been captured from the Modeina Weed Management Strategy that Greening Australia prepared in 2017. Only species that are widespread and/or have a high level of risk have been chosen to be controlled within these areas.

3.0 Survey Methodology

3.1 Woody weeds

Woody weeds are classified as African Boxthorn *(Lycium ferocissimum)*, Century Plant *(Agave Americana),* Fennel *(Foeniculum vulgare),* Prickly Pear *(Opuntia spp.)* and Sweet Briar *(Rosa rubiginosa)*.

All species had an extremely low abundance. These species' were individually counted. Hence, the data shows 0% or 1% coverage across all zone.

3.2 Herbs and Grass weeds

Herb and grass weeds are Artichoke Thistle (*Cynara cardunculus)*, Scotch Thistle *(Onopordum acanthium),* Spear Thistle *(Cirsium vulgare),* Bridal Creeper *(Asparagus asparagodies),* Cape weed (*Arctotheca calendula),* Galenia *(Galenia pubescens),* Horehound *(Marrubim vulgare),* Paterson's Curse *(Echium plantagineum),* Chilean Needle Grass *Nassella neesiana),* Toowoomba canary grass *(Phalaris aqatica)* and Serrated Tussock *(Nassella trichotoma)*

These species were surveyed by the method of random quadrat sampling. In each zone, four 5m x 5m quadrats were used to measure the percentage cover of the species. These results were then extrapolated to obtain a percentage cover across each zone.

4.0 Details of Surveyed Weeds

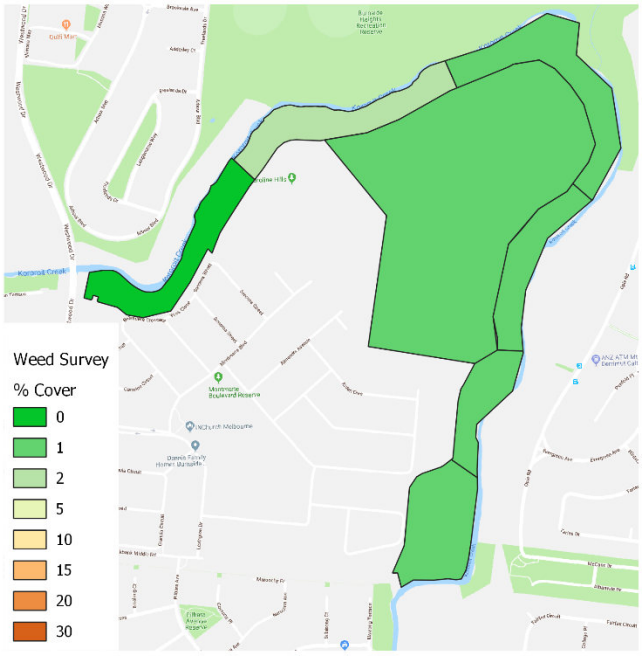
4.1 African Boxthorn - Lycium ferocissimum

Regionally Controlled & Weed of National Significance **Target coverage >1%**

Current coverage

MgtZone	1A	2	4	5	3	1B	DZ
Winter 2019	0	1%	1%	1%	1%	0	1%
Sumer 2018	0	1%	1%	1%	1%	0	1%

African boxthorn is a rounded, woody, densely branched and very thorny large shrub up to 5 metres high. African boxthorn reproduces exclusively by seed which is commonly eaten by birds, seed is viable when excreted. These plants are often found near places where birds have perched such as trees, poles and powerlines. It was widely planted as a hedge plant before its weedy potential was realised. Spread also occurs from contaminated produce and materials. African boxthorn is a fast-growing invasive species that, if untreated, spreads quickly. Seeds may germinate year-round and early root growth is rapid, ensuring young plants are competitive. Plants take at least two years to flower, producing flowers and fruit mostly in summer. Some flowering and fruit production occurs at other times of year. Sometimes deciduous in winter, with new leaves and active growth in spring. Broken roots and cut stumps can sprout regrowth.



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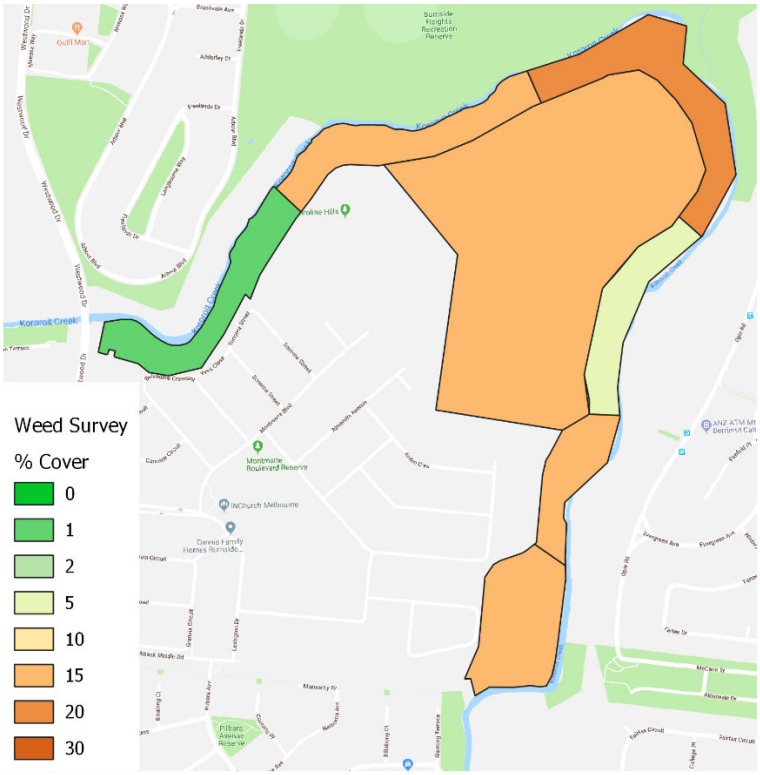
4.2 Artichoke Thistle - Cynara cardunculus

Regionally Controlled **Target coverage > 5%**

Current coverage

MgtZone	1A	2	4	5	3	1B	DZ
Winter 2019	1%	15%	20%	5%	15%	5%	15%
Summer 2018	2%	10%	10%	5%	10%	10%	15%

A perennial or biennial spiny thistle with annual tops and a cluster of large bright purple flowers that are 5-8 cm in diameter during summer. The mature plant is erect, with stems 1- 2 m tall arising from a bushy rosette up to 2 m wide and tall. The stem is strongly ribbed and covered with downy grey hairs and usually single at the base and branched towards the top. The large, grey green leaves are deeply lobed and spiny with woolly hairs underneath.



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4.4 Spear Thistle - Cirsium vulgare

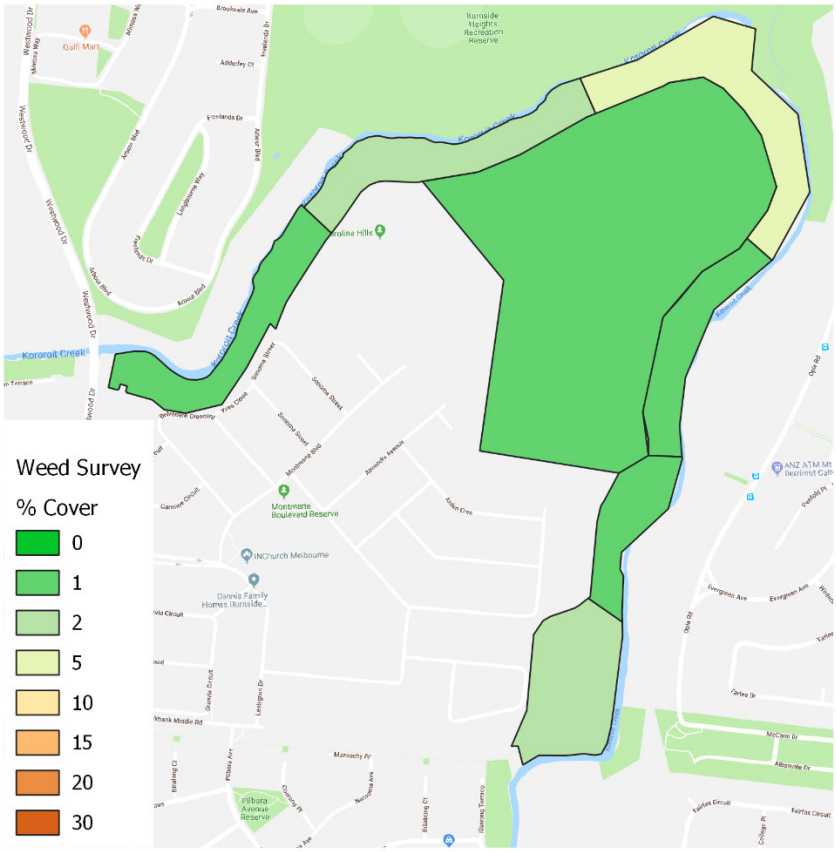
Regionally Controlled Weeds ***Target coverage >5%***

Current coverage

MgtZone	1A	2	4	5	3	1B	DZ
Winter 2019	1%	2%	5%	1%	1%	2%	2%
Summer 2018	5%	10%	10%	10%	5%	5%	2%

An annual or short-term perennial herb with erect growth to 1.5 m tall. Stems have spiny wings and are cobwebby. Upper leaf surface is dark green and rough while the lower surface is white with short matted hairs.

A common species of wet or summer-moist land, including swamps, depressions, drains, waste-land, pastures and cultivated soils. Prefers open, non-shaded environments, heavy textured soils and good fertility.



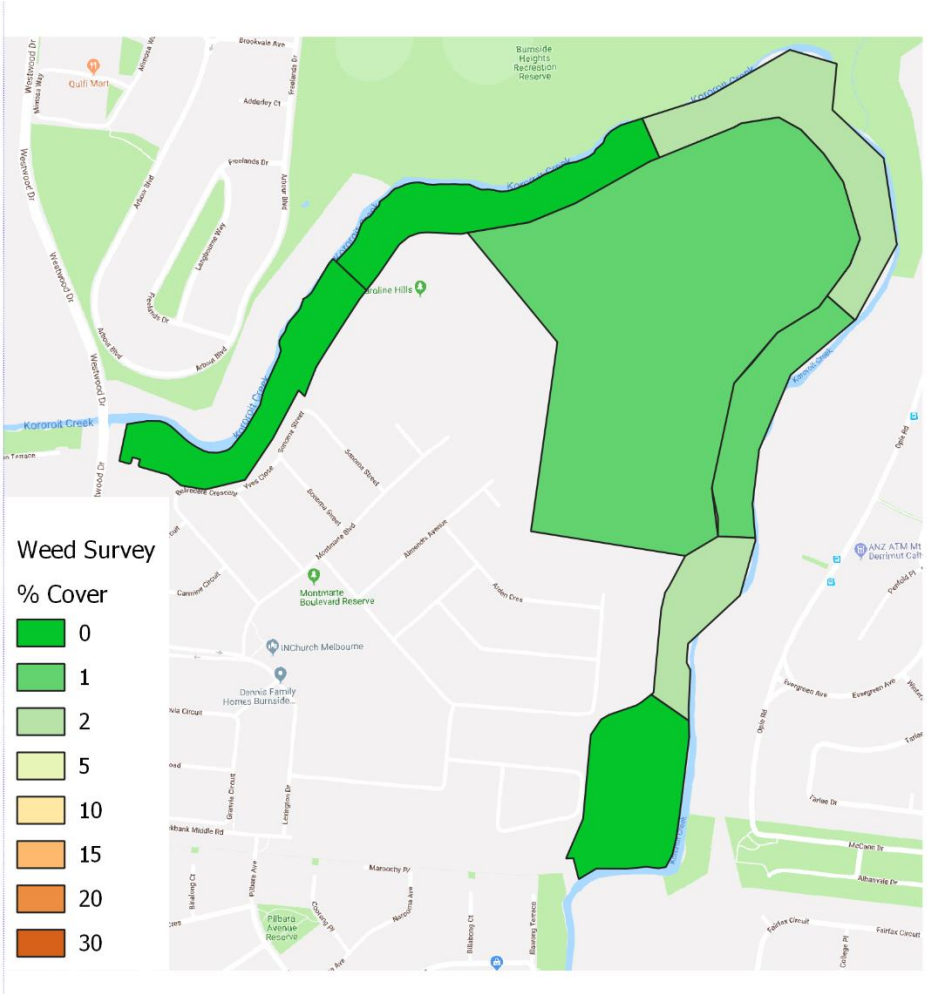
4.5 Bridal Creeper - Asparagus asparagodies

Regionally Controlled - Weed of National Significance **Target coverage > 1%**

Current Coverage

MgtZone	1A	2	4	5	3	1B	DZ
Winter 2019	0%	0%	2%	1%	2%	1%	0%
Sumer 2018	0%	0%	2%	2%	5%	5%	0%

It is regarded as one of the worst weeds in Australia because of its invasiveness, potential for spread, and economic and environmental impacts. Bridal creeper entered the country as a garden plant and is now a major weed of bushland in southern Australia, where its climbing stems and foliage smother native plants. It forms a thick mat of underground tubers which impedes the root growth of other plants and often prevents seedling establishment. Rare native plants, such as the rice flower Pimelea spicata, are threatened with extinction by bridal creeper.



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4.6 Cape weed - Arctotheca calendula

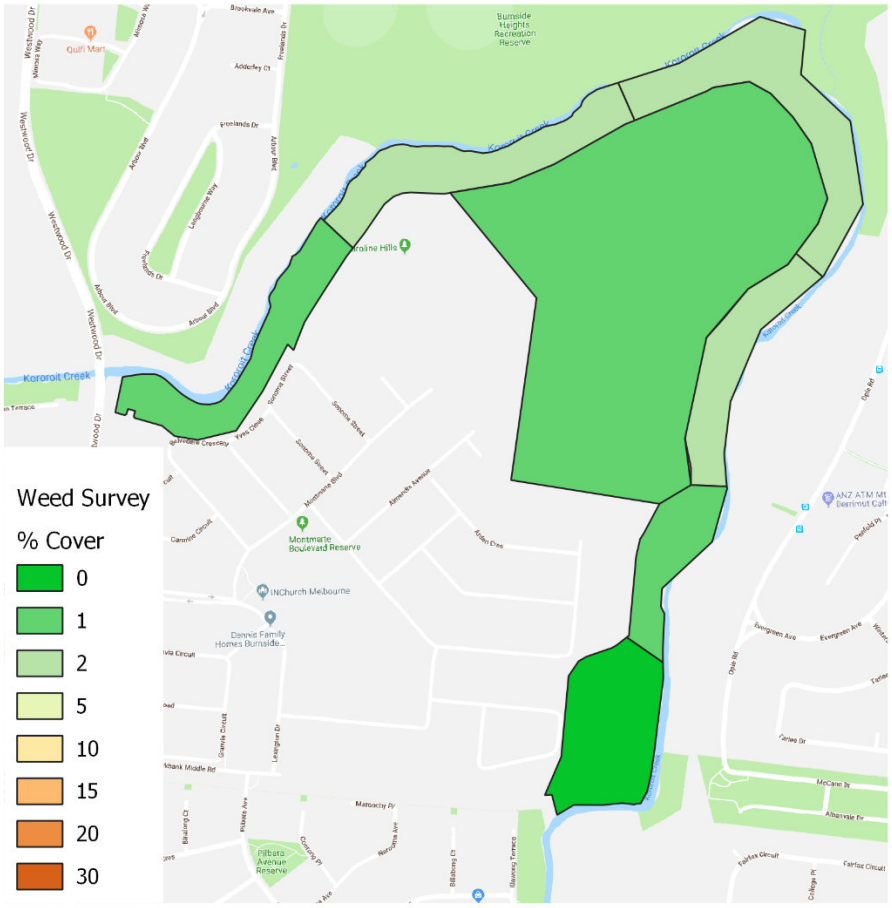
Not declared or considered noxious **Target coverage > 5%**

Current Coverage

MgtZone	1A	2	4	5	3	1B	DZ
Winter 2019	1%	2%	2%	2%	1%	1%	0%
Sumer 2018	1%	5%	2%	2%	2%	2%	0%

This plant is widespread and common weed in pastures, lawns, cultivation and waste areas across Victoria. Typically a plant of fresh-water habitats but may occur on the fringes of saline swamps and flats during wetter periods.

It is stemless or shortly stemmed, herb, 80 cm wide and 30 cm high, with a taproot and a basal rosette of leaves. Leaves are 5-25 cm long and 2-6 cm wide.



4.7 Century Plant - Agave Americana

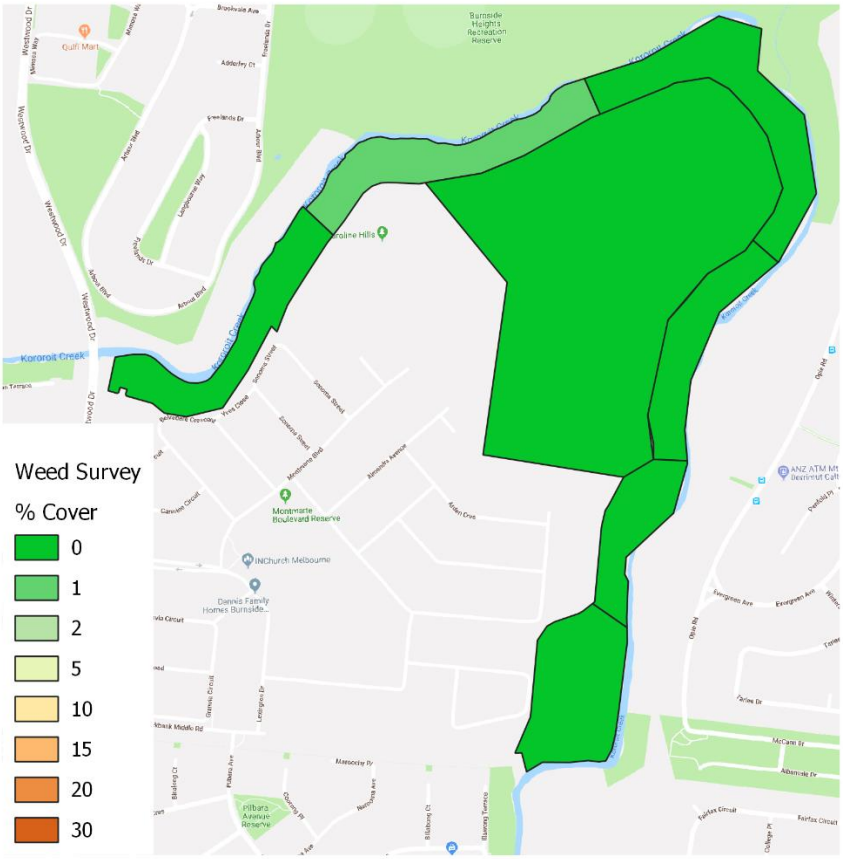
Not declared or considered noxious **Target coverage > 1%**

Current Coverage

MgtZone	1A	2	4	5	3	1B	DZ
Winter 2019	0%	1%	0%	0%	0%	0%	0%
Summer 2018	0%	1%	0%	0%	0%	0%	0%

A very large and long-lived rosette-forming plant, growing 1-2 m high and 2-4 m across.

Older individuals may sometimes develop a short woody stem at the base of the plant and commonly produces numerous suckers which form a large clump or colony. When fully mature this plant will develops a massive flower cluster on a robust flowering stem 6-12 m tall.



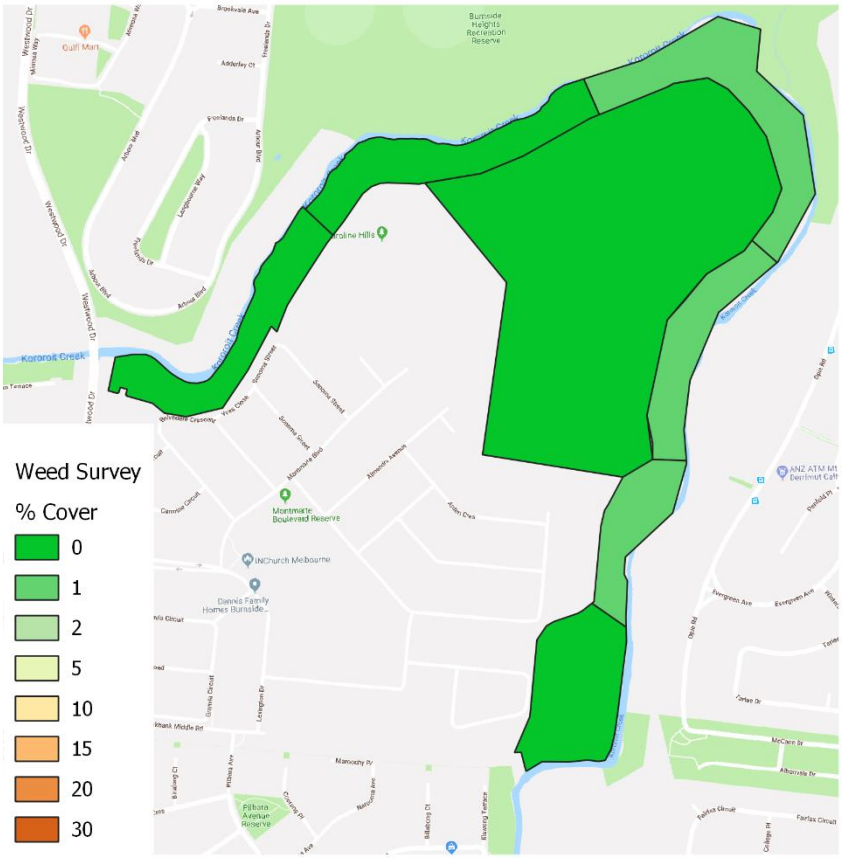
4.8 Fennel - Foeniculum vulgare

***Restricted Weeds* noxious** **Target coverage > 1%**

Current Coverage

MgtZone	1A	2	4	5	3	1B	DZ
Winter 2019	0%	0%	1%	1%	1%	0%	0%
Summer 2018	0%	0%	1%	1%	1%	0%	0%

An erect multi-stemmed perennial herb commonly 1.5 to 2.0 metres high. It is found along waterways, drainage lines and in seasonally moist locations within grasslands and woodlands. Dense infestations may restrict access to waterways. A soft, herbaceous plant the high growth of the plant may be a nuisance to people



4.9 Galenia - Galenia pubescens

Not declared or considered noxious **Target coverage > 5%**

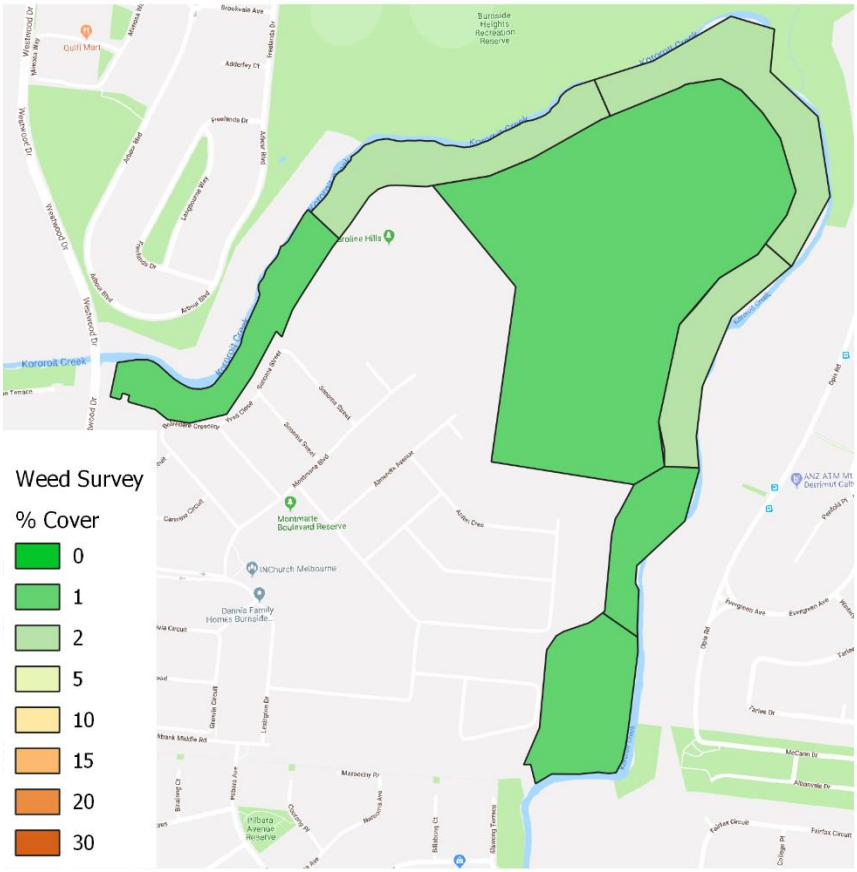
Current Coverage

MgtZone	1A	2	4	5	3	1B	DZ
Winter 2019	1%	2%	2%	2%	1%	2%	1%
Summer 2018	5%	15%	10%	5%	10%	10%	1%

This perennial creeping, herbaceous plant growing to about 60 cm high and 1–2 m wide.

It is deep rooted and flowers from late spring to early autumn. Galenia reproduces by seed. Most dispersal of seed occurs by wind, water, birds and livestock. Movement of contaminated soil by vehicles and equipment can also contribute to its spread.

Drought and salt tolerant, galenia grows over and smothers existing vegetation by forming a thick dense mat. It invades coastal dunes, pastures, disturbed areas, lawns, roadsides and rocky outcrop vegetation. Galenia is known to produce nitrates that can be toxic to stock.



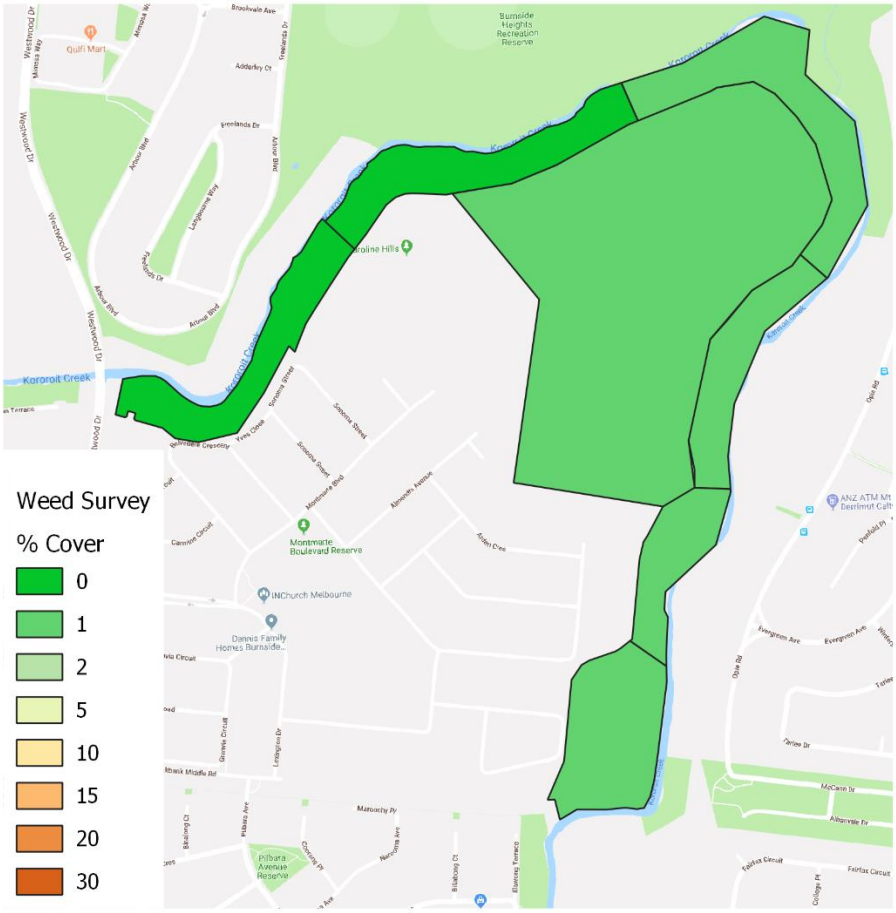
4.10 Horehound - Marrubim vulgare

Not declared or considered noxious **Target coverage > 5%**

Current Coverage

MgtZone	1A	2	4	5	3	1B	DZ
Winter 2019	0%	0%	1%	1%	1%	1%	1%
Sumer 2018	2%	2%	2%	2%	7%	2%	1%

A bushy perennial plant, 30 to 80 cm high, sharply aromatic when crushed, covered with dense whitish hairs. Horehound thrives on poor soil and in waste places. It invades poor pastures which provide little competition. Horehound contains a bitter alkaloid which makes it unpalatable for grazing livestock. As well as being an agricultural weed of pastures horehound has become an important environmental weed because of its ability to invade disturbed native vegetation



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4.11 Paterson's Curse - Echium plantagineum

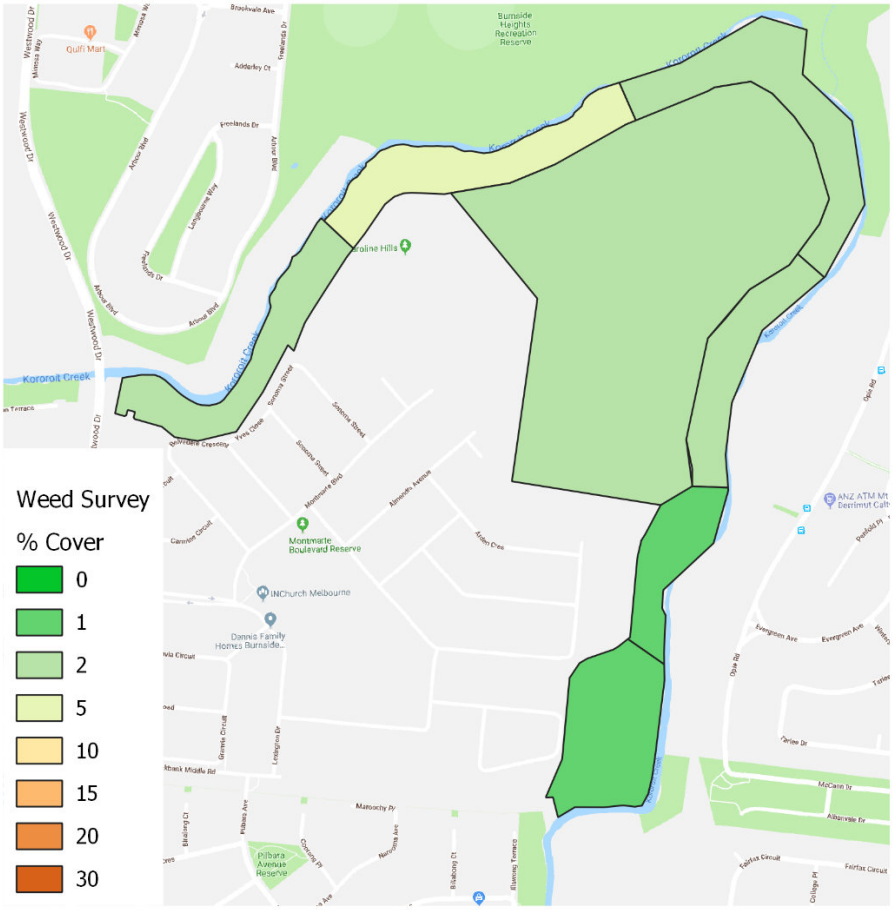
Regionally controlled **Target coverage > 5%**

Current Coverage

MgtZone	1A	2	4	5	3	1B	DZ
Winter 2019	2%	5%	2%	2%	1%	1%	1%
Summer 2018	5%	5%	2%	2%	2%	2%	1%

Paterson's curse is an annual, occasionally biennial, herb that grows as a rosette in autumn and winter and produces flowering stalks in spring and early summer. The rosette usually grows parallel to the ground, however the leaves may be erect in dense vegetation.

Plants begin to produce flowering stalks in late winter, commence flowering in early spring and die in summer. The flowers are usually purple but may be blue or pink. The first mature seeds are produced four to six weeks after flowering commences.



4.12 Prickly Pear - Opuntia spp.

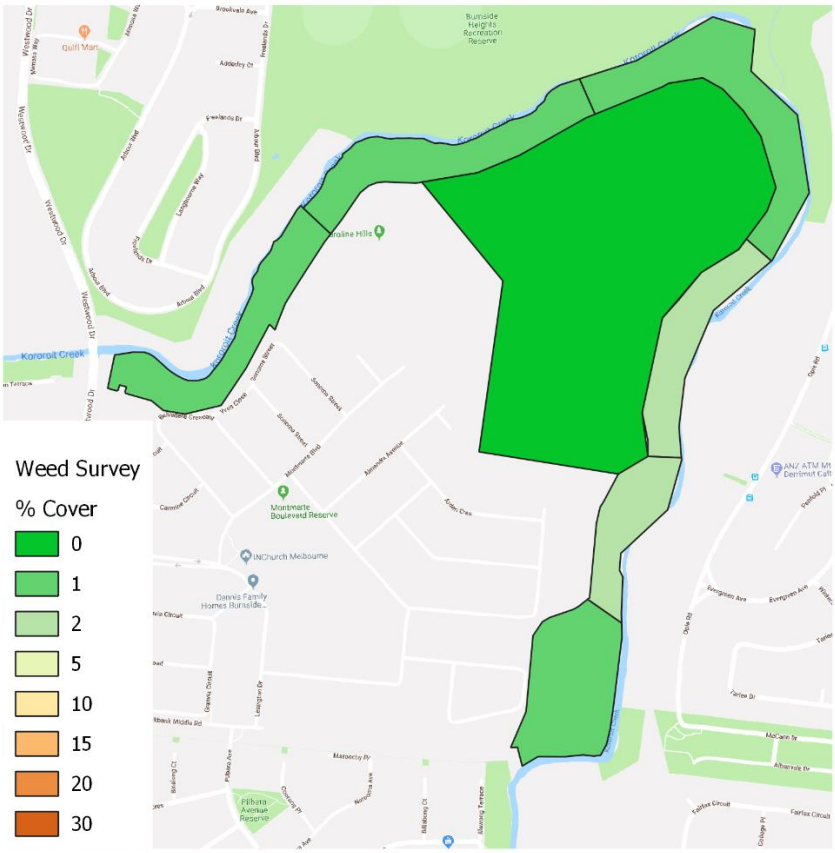
Regionally controlled **Target coverage > 5%**

Current Coverage

MgtZone	1A	2	4	5	3	1B	DZ
Winter 2019	1%	1%	1%	2%	2%	0%	1%
Summer 2018	1%	1%	1%	1%	1%	0%	1%

Prickly pear is an erect succulent shrub which can grow to a height of 5 m. The stems of prickly pear are commonly grey-green to light green. The plant usually has one main woody stem with dense prickles, which gives way to a number of side branches made up of fleshy segments. The segments are approximately 45 cm long, 15 cm wide and 1-2 cm thick, with the upper segments appearing to droop.

Each plant segment has areoles, which are growing points where new segments, flowers or roots can be produced. Each areole has short tuffs of finely barbed bristles and sometimes one to five sharp, 5 cm long spines. Spines are more common on segments that are older and lower on the plant.



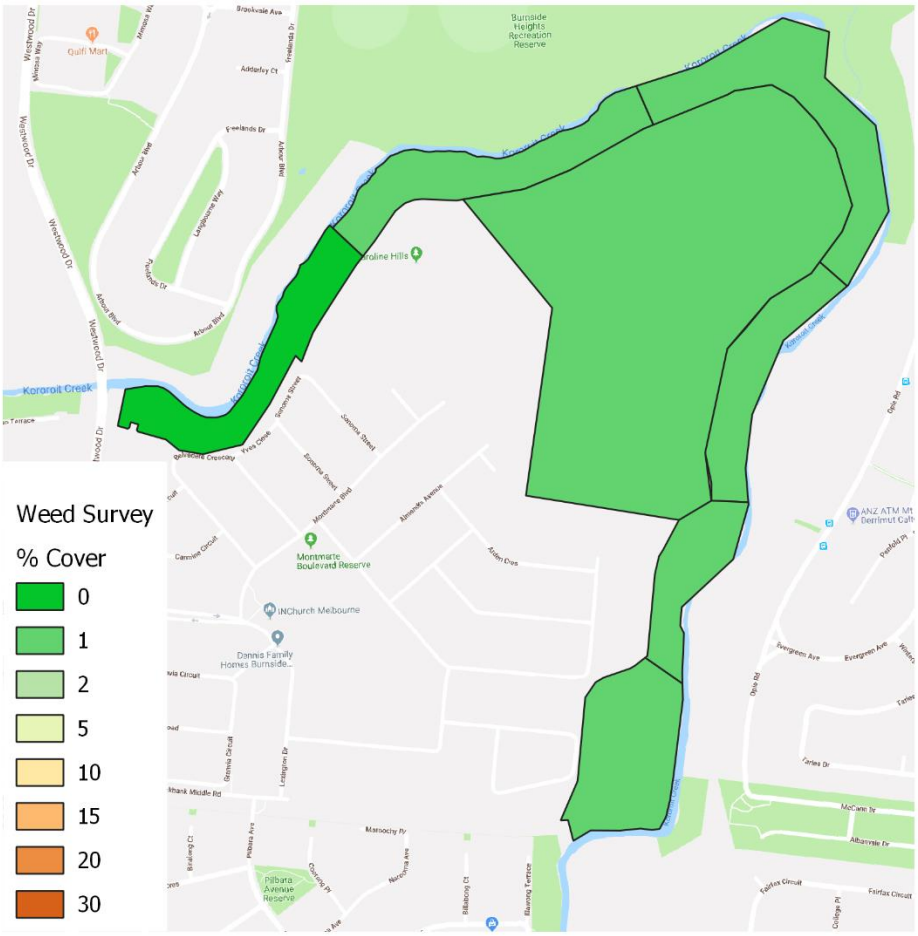
4.13 Sweet Briar - Rosa rubiginosa

Regionally Controlled **Target coverage > 1%**

Current Coverage

MgtZone	1A	2	4	5	3	1B	DZ
Winter 2019	0%	1%	1%	1%	1%	0%	1%
Summer	1%	1%	1%	1%	1%	0%	1%

Sweet briar is a perennial woody shrub up to 3m tall. The stem is usually many (and can be up to several hundred) stems arising from the rootstock; erect or scrambling, up to 3 metres high, green and smooth to brown and somewhat roughened, woody, branched, spreading and sometimes trailing, heavily covered with down-curved prickles up to 1.5 cm long.



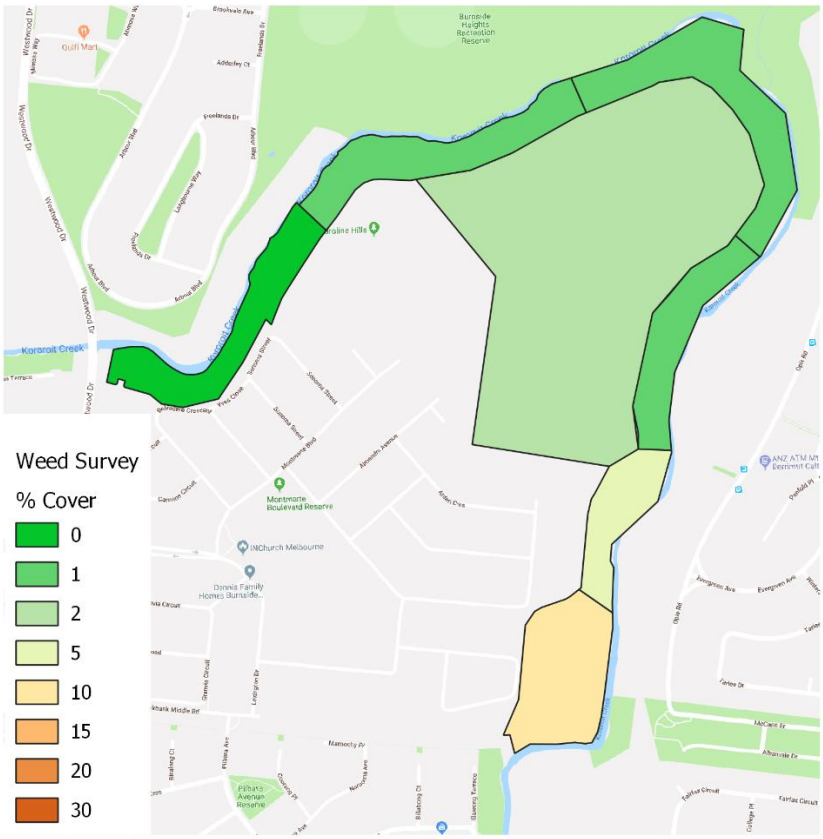
4. 14 Chilean Needle Grass - Nassella neesiana

Regional restricted **Target coverage > 5%**

Current Coverage

MgtZone	1A	2	4	5	3	1B	DZ
Winter 2019	0%	1%	1%	1%	5%	1%	10%
Summer 2019	0%	2%	2%	2%	5%	5%	10%

Chilean needle grass is a tussocky perennial in the speargrass group of grasses growing to about 1 m high. It leaves are hairless and are normally grow to 30 cm long and 5 mm wide. With the flowering head being to 40 cm long.



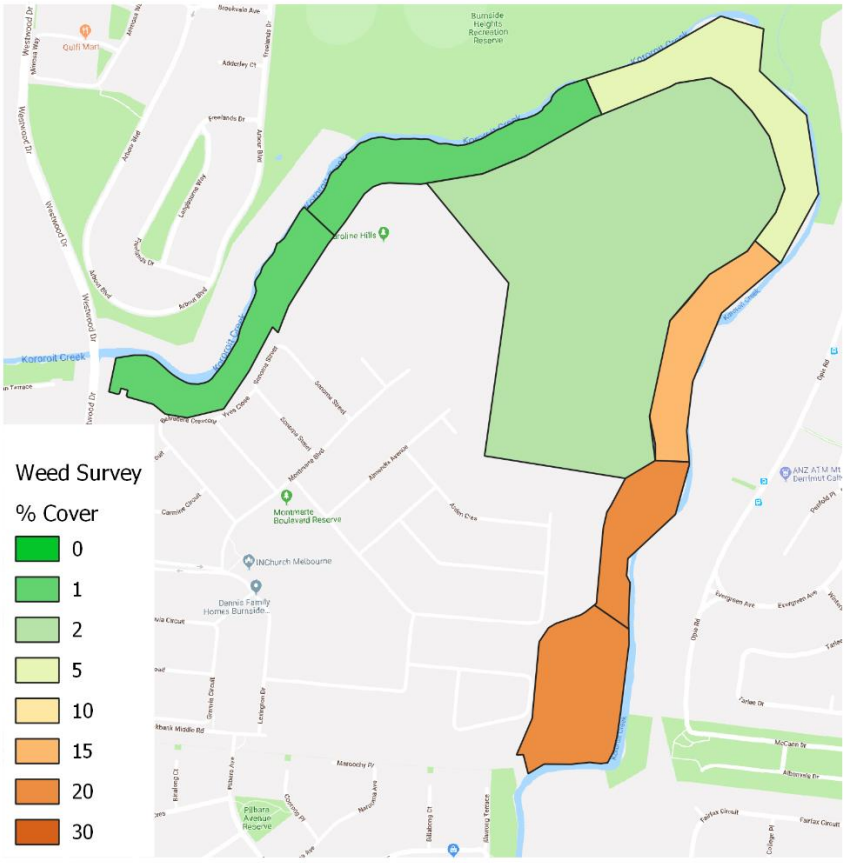
4.15 Toowoomba canary grass - Phalaris aqatica

Not declared and considered noxious **Target coverage > 5%**

Current Coverage

MgtZone	1A	2	4	5	3	1B	DZ
Winter 2019	1%	1%	5%	15%	20%	30%	20%
Summer 2018	1%	1%	10%	15%	15%	30%	20%

Widely used as a pasture species where annual rainfall exceeds 450 mm. It prefers fertile, seasonally moist sites. Commonly spreads from pastures, road verges and drainage ditches to adjacent indigenous vegetation. Toowoomba canary grass invades dry coastal vegetation, heathland and heathy woodland, lowland grassland and grassy woodland, dry sclerophyll forest and woodland, damp sclerophyll forest, riparian vegetation and freshwater wetlands.



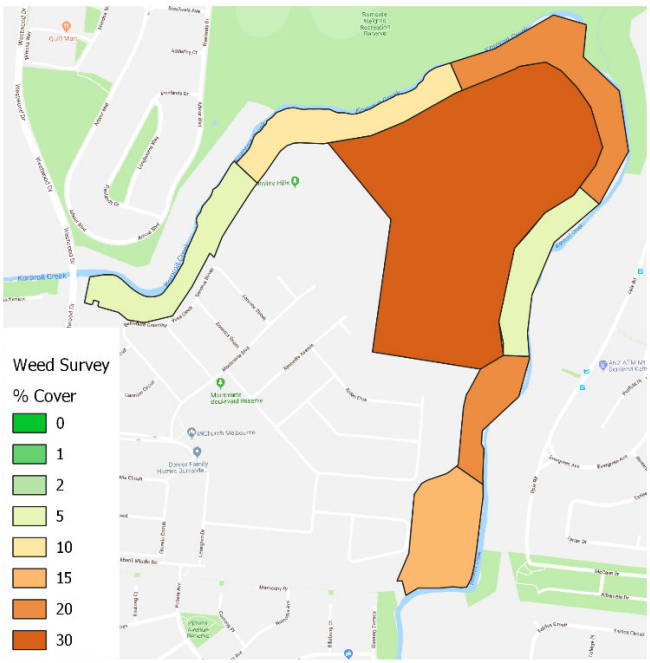
4.16 Serrated Tussock - Nassella trichotoma

Regionally Controlled - *Weed of National Significance* **Target coverage > 5%**

Current Coverage

MgtZone	1A	2	4	5	3	1B	DZ
Winter 2019	5%	10%	20%	5%	20%	30%	15%
Sumer 2018	5%	15%	15%	15%	20%	30%	15%

Serrated tussock is a long lived perennial grass growing up to 60cm in height with a base of 25cm in diameter. Plant size varies with soil fertility and location. In infertile conditions plants may only reach a height of 15cm. Serrated tussock is shallow rooted with an extensive network of fibrous roots occurring predominantly in the top 20cm of soil. The roots are dense, wiry and fibrous making serrated tussock very difficult to pull out, even when small. Flowering stems emerge from the base of the plant. They are multi-branched and up to 35cm long. The purple colour of the small seeds produces an overall purplish haze to the serrated tussock seed head. Once the seeds have formed, the entire seed head will 'droop' over the tussock towards the ground. Flowering takes place as early as late winter (August) and will continue throughout the spring (September – November). Autumn flowering has been known to occur. Seeds take 8 – 10 weeks to mature, normally occurring throughout the spring and summer months. Once seeds are ripe, the whole flowing stem detaches from the base of the plant and is dispersed by the wind. Seed is dormant and will not germinate for about 6 months.



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6.0 Summary

6.1 Zone 1A

Low amounts of both native and exotic vegetation can be found within zone 1A. With more than 80% of this zone being bare earth. All species have been very well controlled and there is a low prevalence of all high threat weed species. The species that were recorded have all recently germinated and are small.

The emergence of lower threat weeds such as brassica has occurred in bare areas

6.2 Zone 2

Grasses and herbs within this zone have been well controlled.

All woody weeds had been controlled with the exception of a cluster of Century Plants still surviving. The small reshooting plants are being successfully controlled. The larger plant has not been effected by herbicide application

The native vegetation within this zone is surrounded by and interspersed with Serrated Tussock and Artichoke Thistle. These exotic plants have been controlled but weed pressures are on sides will be a constant concern.

Many different thistle spp. intermixed with Galenia was found infesting some of the areas close to the creek.

6.3 Zone 4

This zone varies greatly with high weed loads thought-out. With areas of controlled Serrated Tussock and Toowoomba Canary Grass to large areas of unmanaged thistles that germinate quickly. Many different thistle spp. can be found infesting some of the areas close to the creek.

Several reshooting Boxthorns were noted.

6.4 Zone 5

Over half of this zone is dominated by Serrated Tussock and Toowoomba Canary Grass. The majority of these species have been well controlled. With large sections of this zone currently covered in dead vegetation. Many artichoke thistles have germinated in barer areas in this zone along with lower threat weeds such as brassica has occurred in bare areas

This zone had the highest prevalence of Prickly Pear, with 4 clusters been seen. These plants all showed signs of previous control.

Only reshooting woody weeds were seen.

6.5 Zone 3

This zone is dominated by Serrated Tussock and Toowoomba Canary Grass. The majority of these species have been well controlled. With large sections of this zone currently been completely covered in dead vegetation. This has led to artichoke thistles and brassica germinating in these areas.

The Horehound was controlled well last visit

Several reshooting woody weeds were seen and controlled this visit.

6.5 Zone 1B

Overall this zone is dominated by Serrated Tussock and Toowoomba Canary Grass. With most areas showing few signs of previous control.

No woody weeds were recorded.

Weed Survey Report

Modeina Estate - Phase 2 -

Date: 13/12/2018

Submitted by Callum Low

Australian Ecosystems Pty Ltd

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Contents

1.0 Introduction 3
2.0 Weeds Surveyed 3
3.0 Survey Methodology 3
3.1 Woody weeds 3
3.2 Herbs and Grass weeds 4
4.0 Details of Surveyed Weeds 5
4.1 African Boxthorn - Lycium ferocissimum 5
4.2 Artichoke Thistle - Cynara cardunculus 6
4.3 Scotch Thistle - Onopordum acanthium 7
4.4 Spear Thistle - Cirsium vulgare 8
4.5 Bridal Creeper - Asparagus asparagodies 9
4.6 Cape weed - Arctotheca calendula 10
4.7 Century Plant - Agave Americana 11
4.8 Fennel - Foeniculum vulgare 12
4.9 Galenia - Galenia pubescens 13
4.10 Horehound - Marrubim vulgare 14
4.11 Paterson's Curse - Echium plantagineum 15
4.12 Prickly Pear - Opuntia spp. 16
4.13 Sweet Briar - Rosa rubiginosa 17
4. 14 Chilean Needle Grass - Nassella neesiana 18
4.15 Toowoomba canary grass - Phalaris aqatica 19
4.16 Serrated Tussock Nassella trichotoma 20
5.0 Results 21
6.0 Summary 22
6.1 Zone 1A 22
6.2 Zone 2 22
6.3 Zone 4 22
6.4 zone 5 22
6.5 Zone 3 22
6.5 Zone 1B 23

1.0 Introduction

Australian Ecosystems (AE) has prepared this report for Dennis Family Corporation (Project Management) Pty Ltd. This report details the results of weed survey's conducted in early December 2018 within the area described as 'Stage 2 Modeina'. This report should be read in conjunction with, 'Modeina Weed Management Strategy' that Greening Australia prepared in 2017.

2.0 Weeds Surveyed

This survey has captured three weed species:

- African Boxthorn *(Lycium ferocissimum)*
- Artichoke Thistle (*Cynara cardunculus)*
- Scotch Thistle *(Onopordum acanthium)*
- Spear Thistle *(Cirsium vulgare)*
- Bridal Creeper *(Asparagus asparagodies)*
- Cape weed (*Arctotheca calendula)*
- Century Plant *(Agave Americana)*
- Fennel *(Foeniculum vulgare)*
- Galenia *(Galenia pubescens)*
- Horehound *(Marrubim vulgare)*
- Paterson's Curse *(Echium plantagineum)*
- Prickly Pear *(Opuntia spp.)*
- Sweet Briar *(Rosa rubiginosa)*
- Chilean Needle Grass *Nassella neesiana)*
- Toowoomba canary grass *(Phalaris aqatica)*
- Serrated Tussock *(Nassella trichotoma)*

Determined by:

The weeds detailed within this report have been captured from the Modeina Weed Management Strategy that Greening Australia prepared in 2017. Only species that are widespread and/or have a high level of risk have been chosen to be controlled within these areas.

3.0 Survey Methodology

3.1 Woody weeds

Woody weeds are classified as African Boxthorn *(Lycium ferocissimum)*, Century Plant *(Agave Americana),* Fennel *(Foeniculum vulgare),* Prickly Pear *(Opuntia spp.)* and Sweet Briar *(Rosa rubiginosa)*.

All species had an extremely low abundance. These species' individuals were counted. Hence, the data shows 0% or 1% coverage across all zone. This data is numerically shown in the section 5.0 Results

3.2 Herbs and Grass weeds

Herb and grass weeds are Artichoke Thistle (*Cynara cardunculus)*, Scotch Thistle *(Onopordum acanthium),* Spear Thistle *(Cirsium vulgare),* Bridal Creeper *(Asparagus asparagodies),* Cape weed (*Arctotheca calendula),* Galenia *(Galenia pubescens),* Horehound *(Marrubim vulgare),* Paterson's Curse *(Echium plantagineum),* Chilean Needle Grass *Nassella neesiana),* Toowoomba canary grass *(Phalaris aqatica)* and Serrated Tussock *(Nassella trichotoma)*

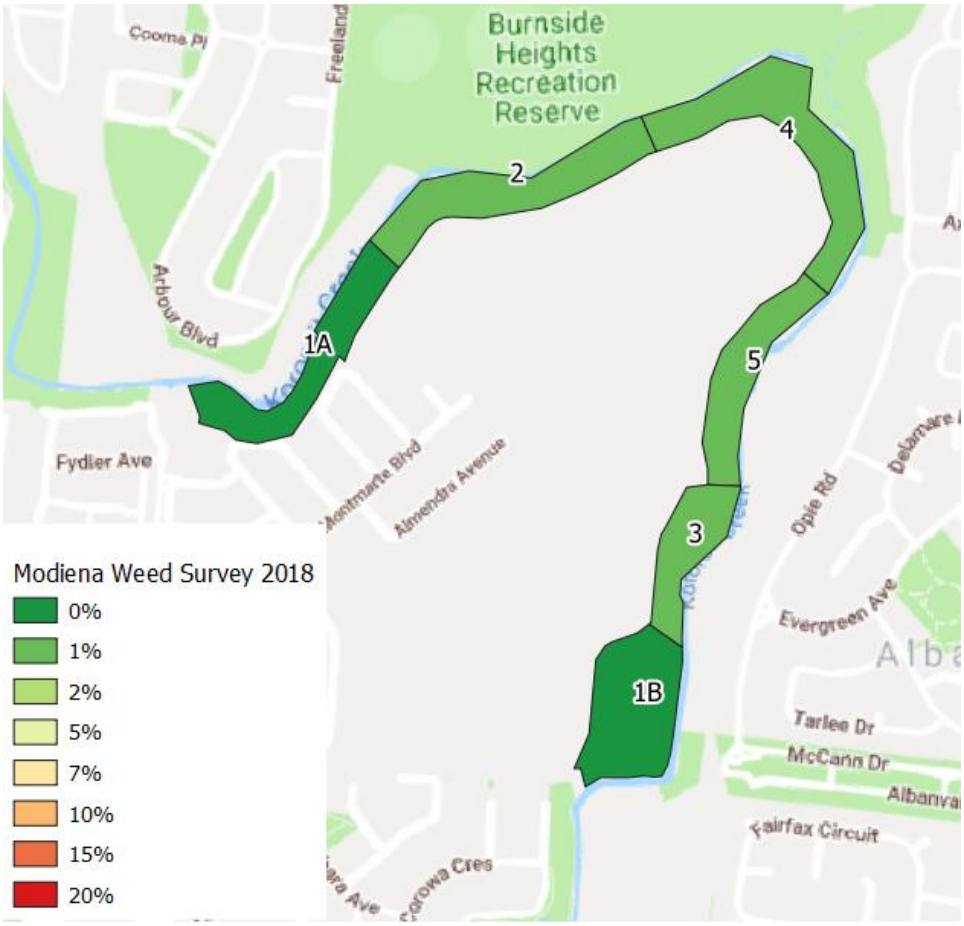
These species were surveyed by the method of random quadrat sampling. In each zone, four 5m x 5m quadrats were used to measure the percentage cover of the species. These results were then extrapolated to obtain a percentage cover across each zone.

4.0 Details of Surveyed Weeds

4.1 African Boxthorn - Lycium ferocissimum

Regionally Controlled - Weed of National Significance

African boxthorn is a rounded, woody, densely branched and very thorny large shrub up to 5 metres high. African boxthorn reproduces exclusively by seed which is commonly eaten by birds, seed is viable when excreted. These plants are often found near places where birds have perched such as trees, poles and powerlines. It was widely planted as a hedge plant before its weedy potential was realised. Spread also occurs from contaminated produce and materials. African boxthorn is a fast-growing invasive species that, if untreated, spreads quickly. Seeds may germinate year-round and early root growth is rapid, ensuring young plants are competitive. Plants take at least two years to flower, producing flowers and fruit mostly in summer. Some flowering and fruit production occurs at other times of year. Sometimes deciduous in winter, with new leaves and active growth in spring. Broken roots and cut stumps can sprout regrowth.



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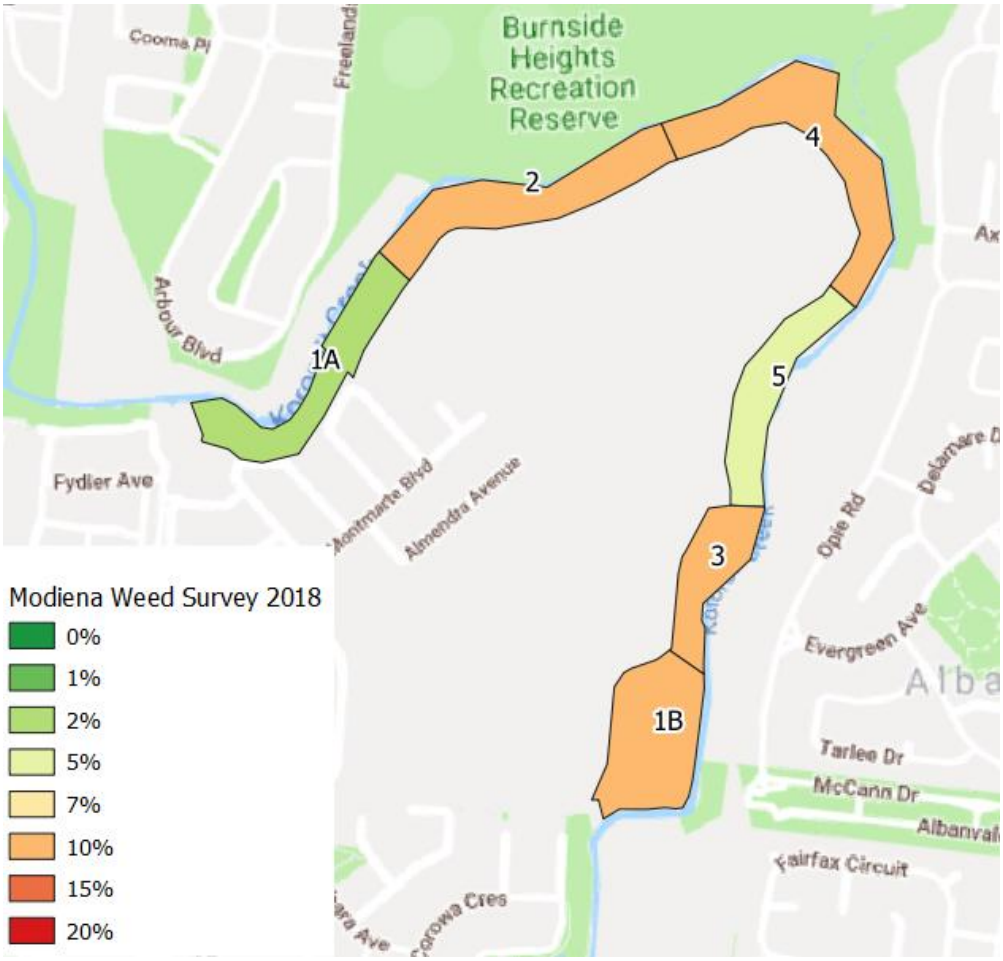
4.2 Artichoke Thistle - Cynara cardunculus

Regionally Controlled

A perennial or biennial spiny thistle with annual tops and a cluster of large bright purple flowers that are 5-8 cm in diameter during summer. The mature plant is erect, with stems 1- 2 m tall arising from a bushy rosette up to 2 m wide and tall. The stem is strongly ribbed and covered with downy grey hairs and usually single at the base and branched towards the top. The large, grey green leaves are deeply lobed and spiny with woolly hairs underneath.

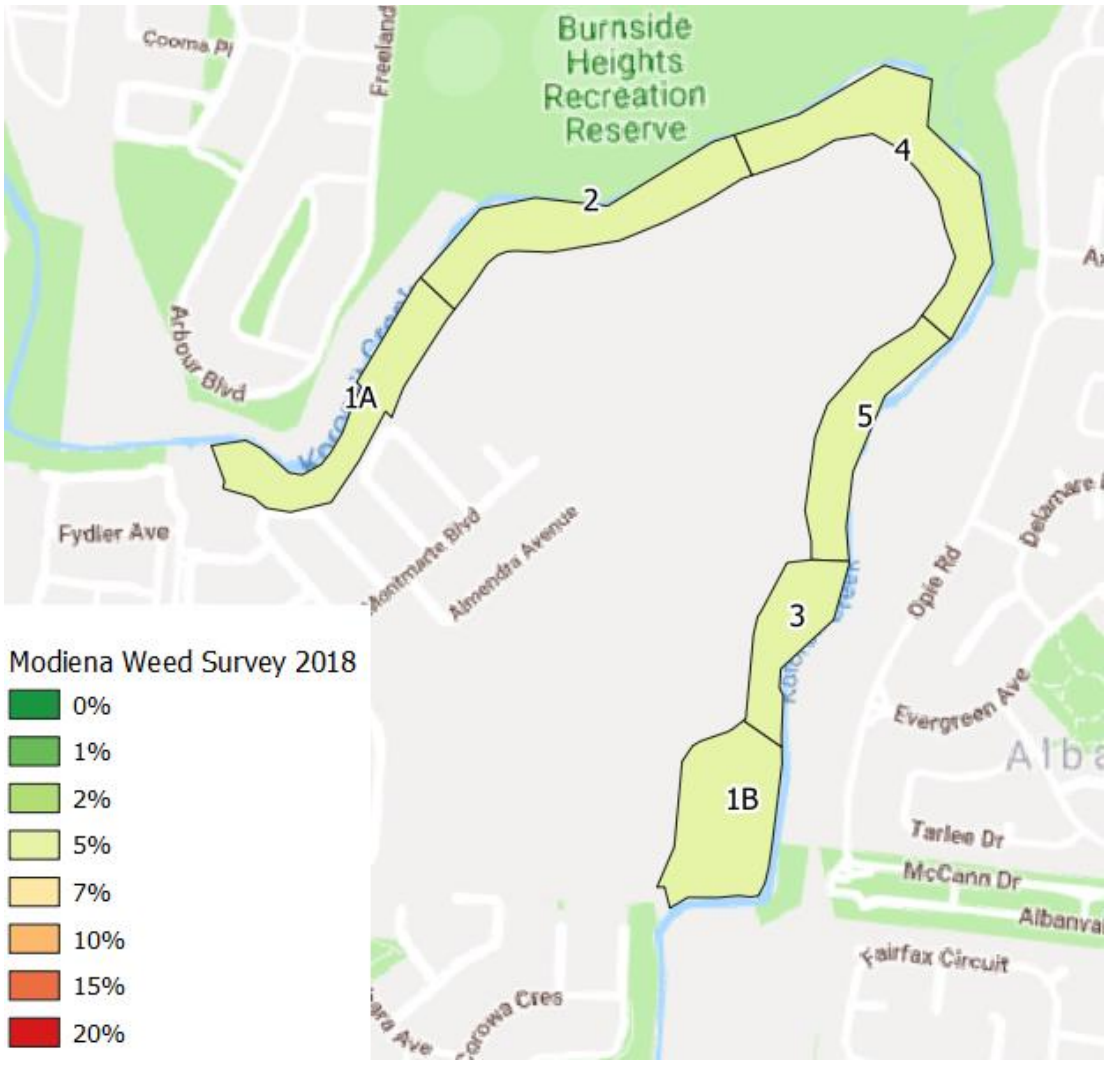


4.3 Scotch Thistle - Onopordum acanthium

Regionally Prohibited Weed

Is a biennial plant, producing a large rosette of spiny leaves the first year. The plants typically germinate in the autumn after the first rains and exist as rosettes throughout the first year, forming a stout, fleshy taproot that may extend down 30 cm or more for a food reserve.

In the second year, the plant can grow to 3 m tall and a width of 1.5 m. The leaves are 10–50 cm wide, are alternate and spiny, often covered with white woolly hairs and with the lower surface more densely covered than the upper. The leaves are deeply lobed with long, stiff spines along the margins. Fine hairs give the plant a greyish appearance. The massive main stem may be 10 cm wide at the base, and is branched in the upper part. Each stem shows a vertical row of broad, spiny wings (conspicuous ribbon-like leafy material), typically 2–3 cm wide, extending to the base of the flower head.

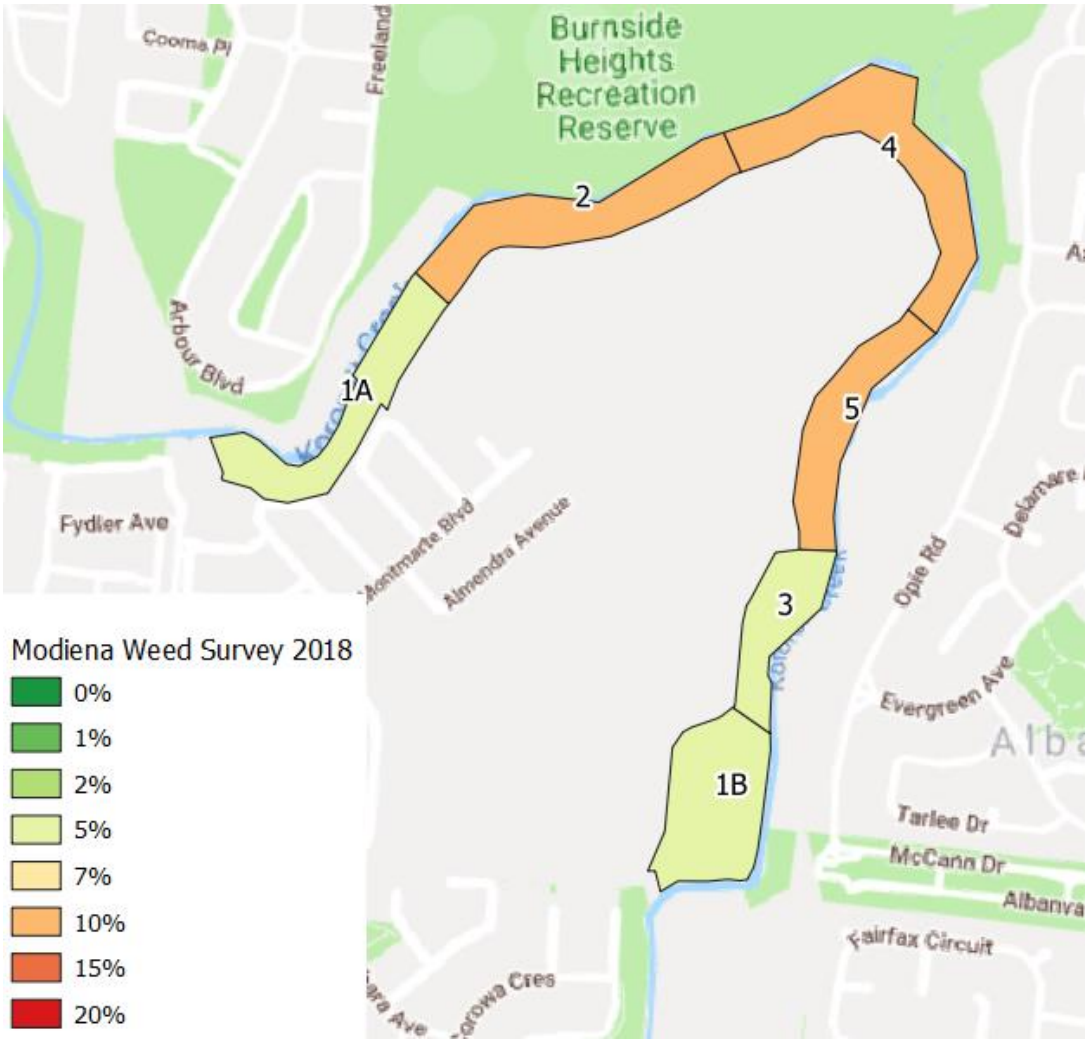


4.4 Spear Thistle - Cirsium vulgare

Regionally Controlled Weeds

An annual or short-term perennial herb with erect growth to 1.5 m tall. Stems have spiny wings and are cobwebby. Upper leaf surface is dark green and rough while the lower surface is white with short matted hairs.

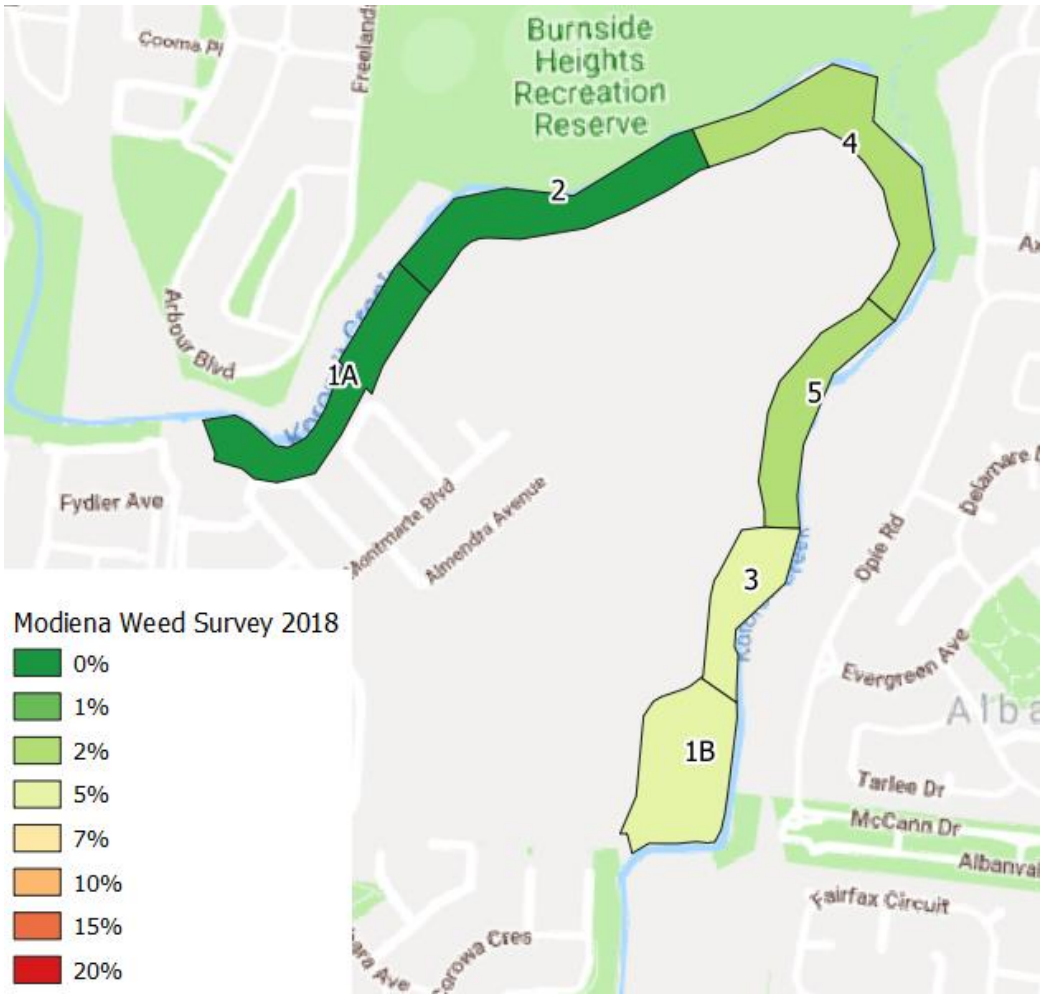
A common species of wet or summer-moist land, including swamps, depressions, drains, waste-land, pastures and cultivated soils. Prefers open, non-shaded environments, heavy textured soils and good fertility.



4.5 Bridal Creeper - Asparagus asparagodies

Regionally Controlled - Weed of National Significance

It is regarded as one of the worst weeds in Australia because of its invasiveness, potential for spread, and economic and environmental impacts. Bridal creeper entered the country as a garden plant and is now a major weed of bushland in southern Australia, where its climbing stems and foliage smother native plants. It forms a thick mat of underground tubers which impedes the root growth of other plants and often prevents seedling establishment. Rare native plants, such as the rice flower Pimelea spicata, are threatened with extinction by bridal creeper.

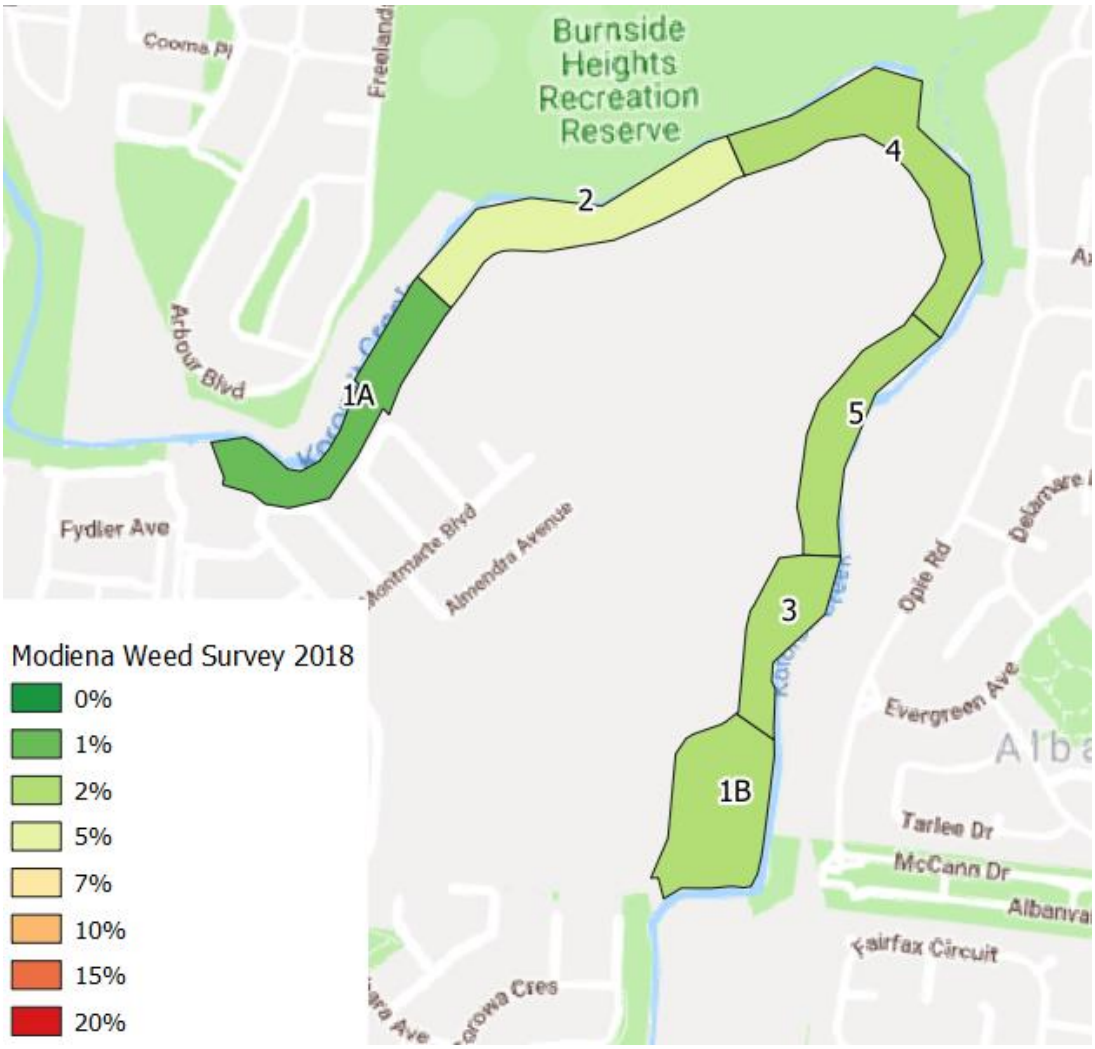


4.6 Cape weed - Arctotheca calendula

Not declared or considered noxious

This plant is widespread and common weed in pastures, lawns, cultivation and waste areas across Victoria. Typically a plant of fresh-water habitats but may occur on the fringes of saline swamps and flats during wetter periods.

It is stemless or shortly stemmed, herb, 80 cm wide and 30 cm high, with a taproot and a basal rosette of leaves. Leaves are 5-25 cm long and 2-6 cm wide.

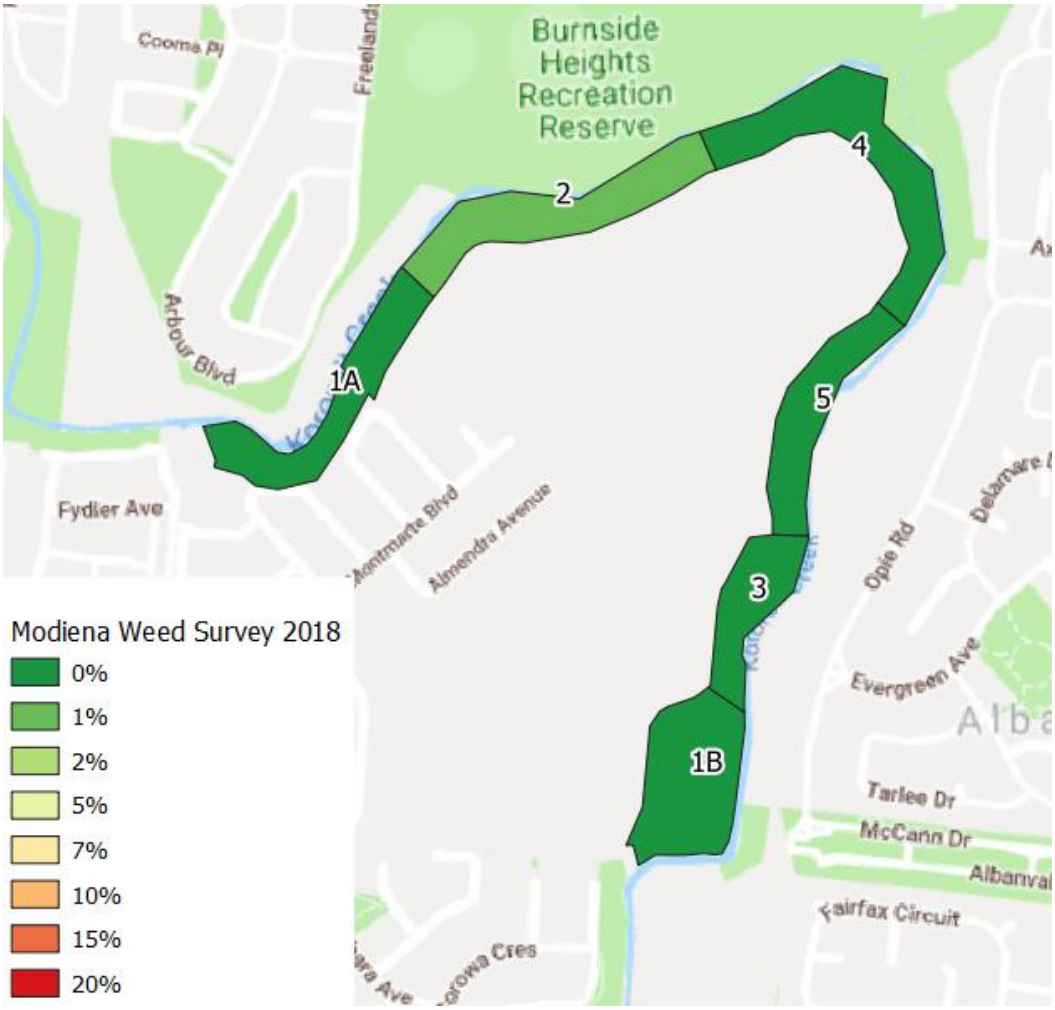


4.7 Century Plant - Agave Americana

Not declared or considered noxious

A very large and long-lived rosette-forming plant, growing 1-2 m high and 2-4 m across.

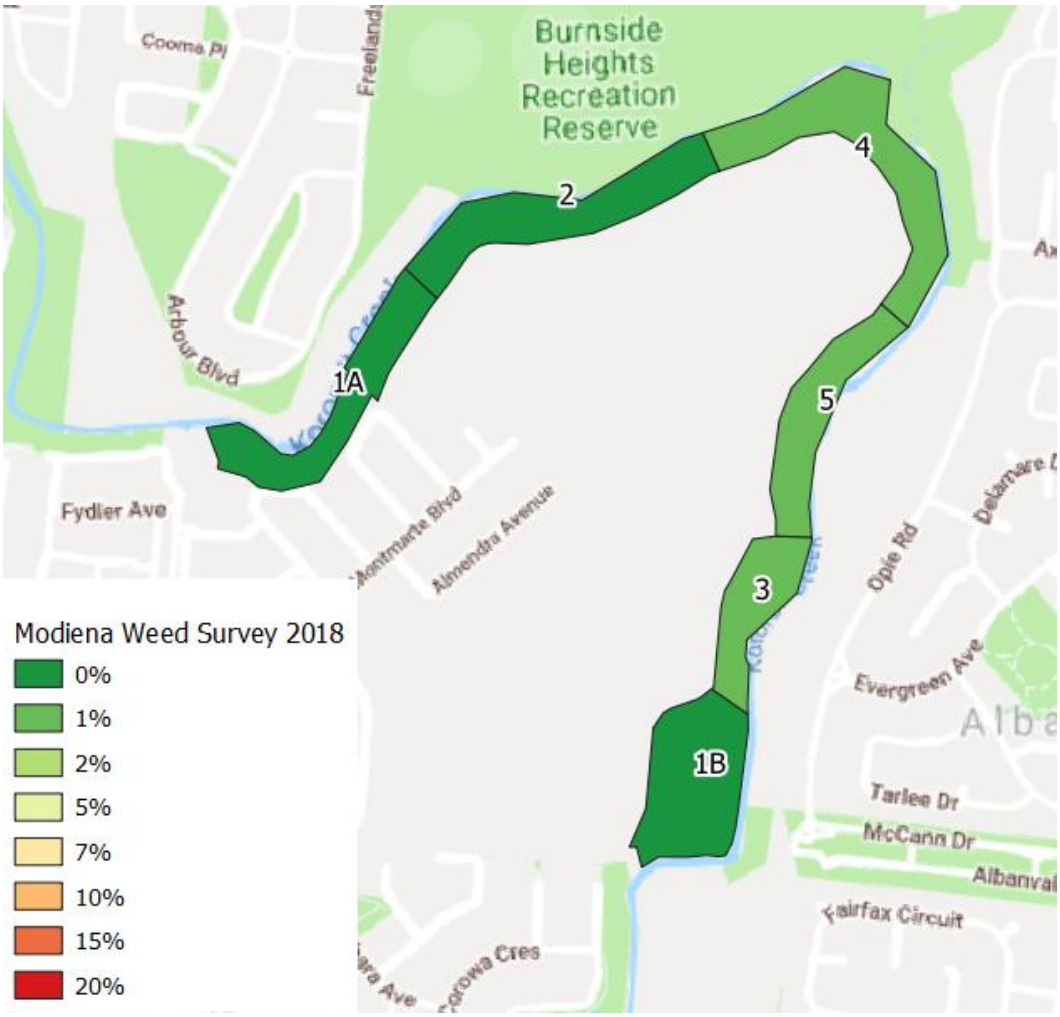
Older individuals may sometimes develop a short woody stem at the base of the plant and commonly produces numerous suckers which form a large clump or colony. When fully mature this plant will develops a massive flower cluster on a robust flowering stem 6-12 m tall.



4.8 Fennel - Foeniculum vulgare

Restricted Weeds

An erect multi-stemmed perennial herb commonly 1.5 to 2.0 metres high. It is found along waterways, drainage lines and in seasonally moist locations within grasslands and woodlands. Dense infestations may restrict access to waterways. A soft, herbaceous plant the high growth of the plant may be a nuisance to people



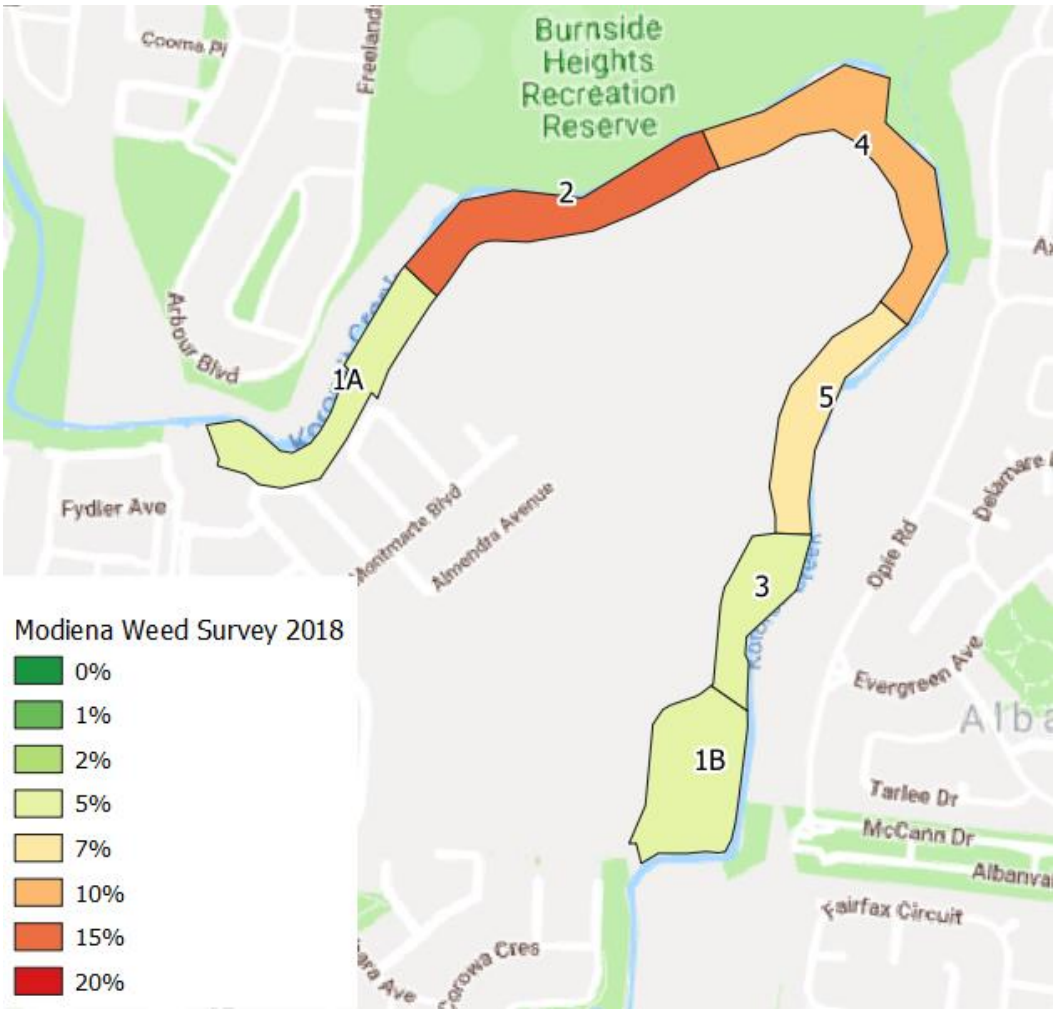
4.9 Galenia - Galenia pubescens

Not declared or considered noxious

This perennial creeping, herbaceous plant growing to about 60 cm high and 1–2 m wide.

It is deep rooted and flowers from late spring to early autumn. Galenia reproduces by seed. Most dispersal of seed occurs by wind, water, birds and livestock. Movement of contaminated soil by vehicles and equipment can also contribute to its spread.

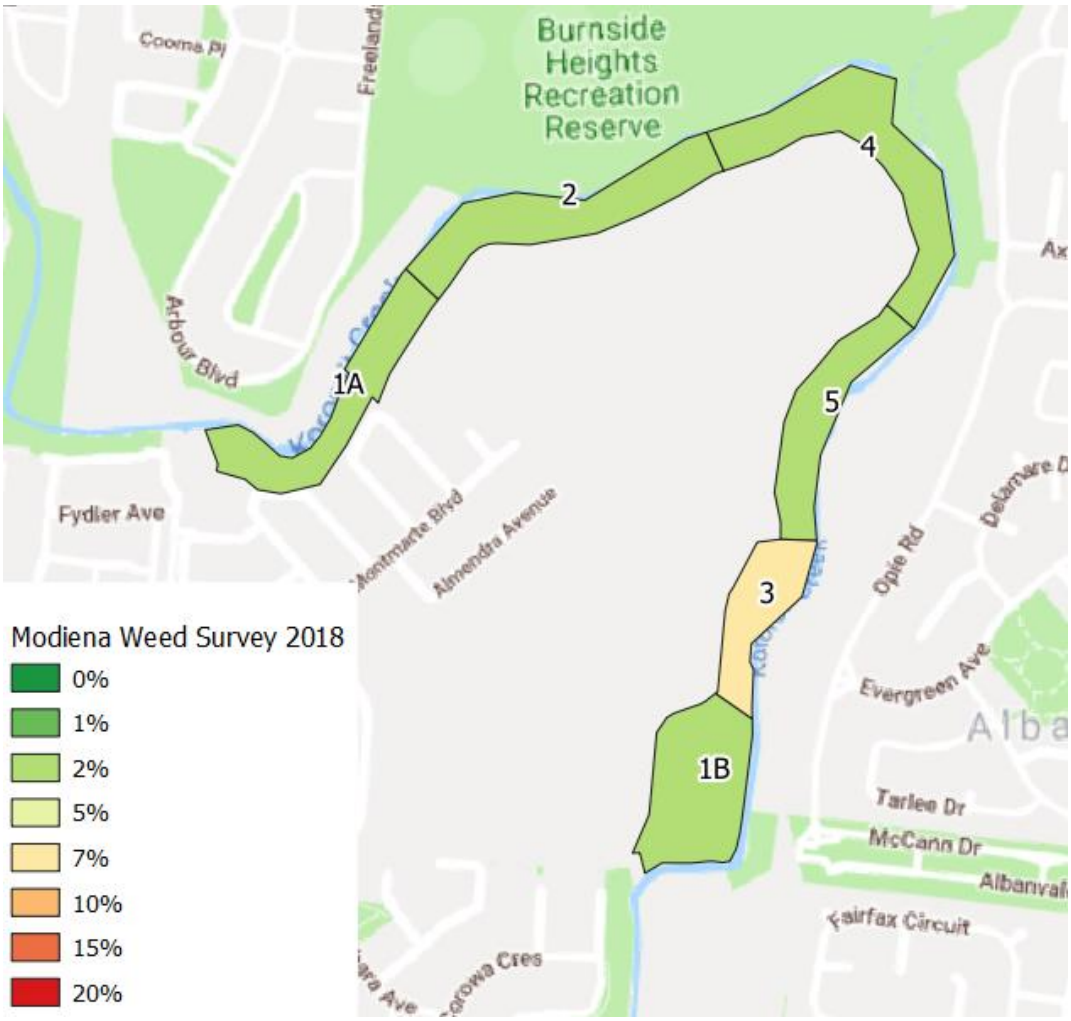
Drought and salt tolerant, galenia grows over and smothers existing vegetation by forming a thick dense mat. It invades coastal dunes, pastures, disturbed areas, lawns, roadsides and rocky outcrop vegetation. Galenia is known to produce nitrates that can be toxic to stock.



4.10 Horehound - Marrubim vulgare

Not declared or considered noxious

A bushy perennial plant, 30 to 80 cm high, sharply aromatic when crushed, covered with dense whitish hairs. Horehound thrives on poor soil and in waste places. It invades poor pastures which provide little competition. Horehound contains a bitter alkaloid which makes it unpalatable for grazing livestock. As well as being an agricultural weed of pastures horehound has become an important environmental weed because of its ability to invade disturbed native vegetation

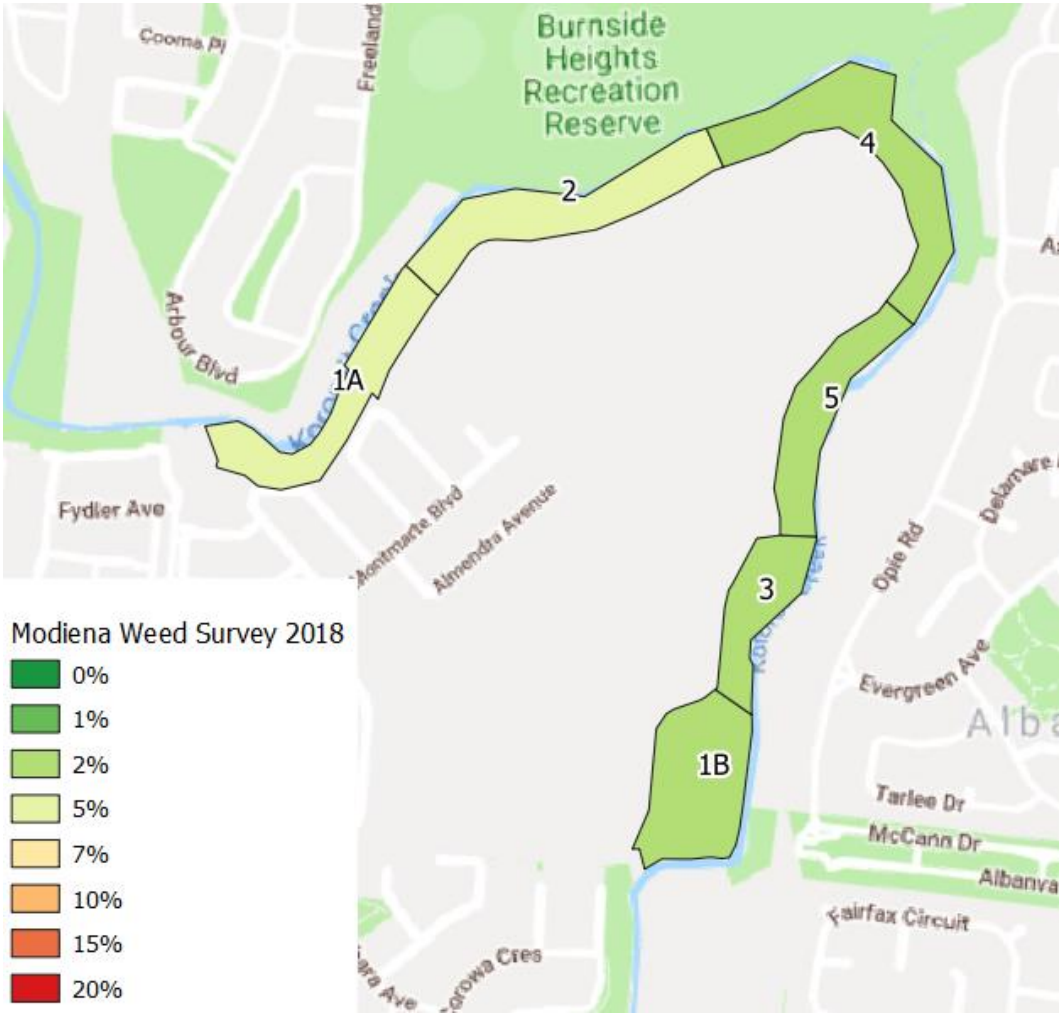


4.11 Paterson's Curse - Echium plantagineum

Regionally controlled

Paterson's curse is an annual, occasionally biennial, herb that grows as a rosette in autumn and winter and produces flowering stalks in spring and early summer. The rosette usually grows parallel to the ground, however the leaves may be erect in dense vegetation.

Plants begin to produce flowering stalks in late winter, commence flowering in early spring and die in summer. The flowers are usually purple but may be blue or pink. The first mature seeds are produced four to six weeks after flowering commences.

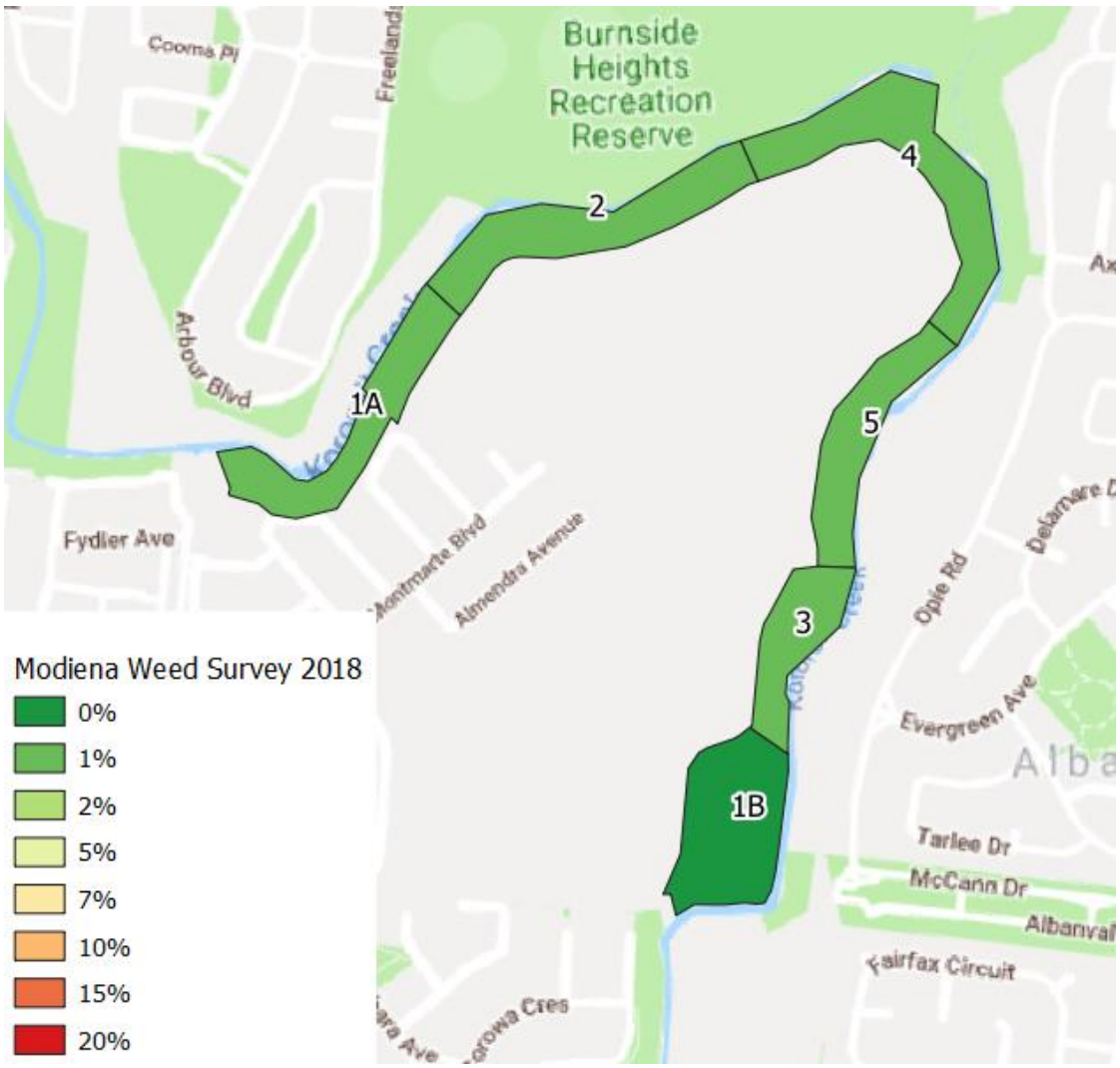


4.12 Prickly Pear - Opuntia spp.

Regionally controlled

Prickly pear is an erect succulent shrub which can grow to a height of 5 m. The stems of prickly pear are commonly grey-green to light green. The plant usually has one main woody stem with dense prickles, which gives way to a number of side branches made up of fleshy segments. The segments are approximately 45 cm long, 15 cm wide and 1-2 cm thick, with the upper segments appearing to droop.

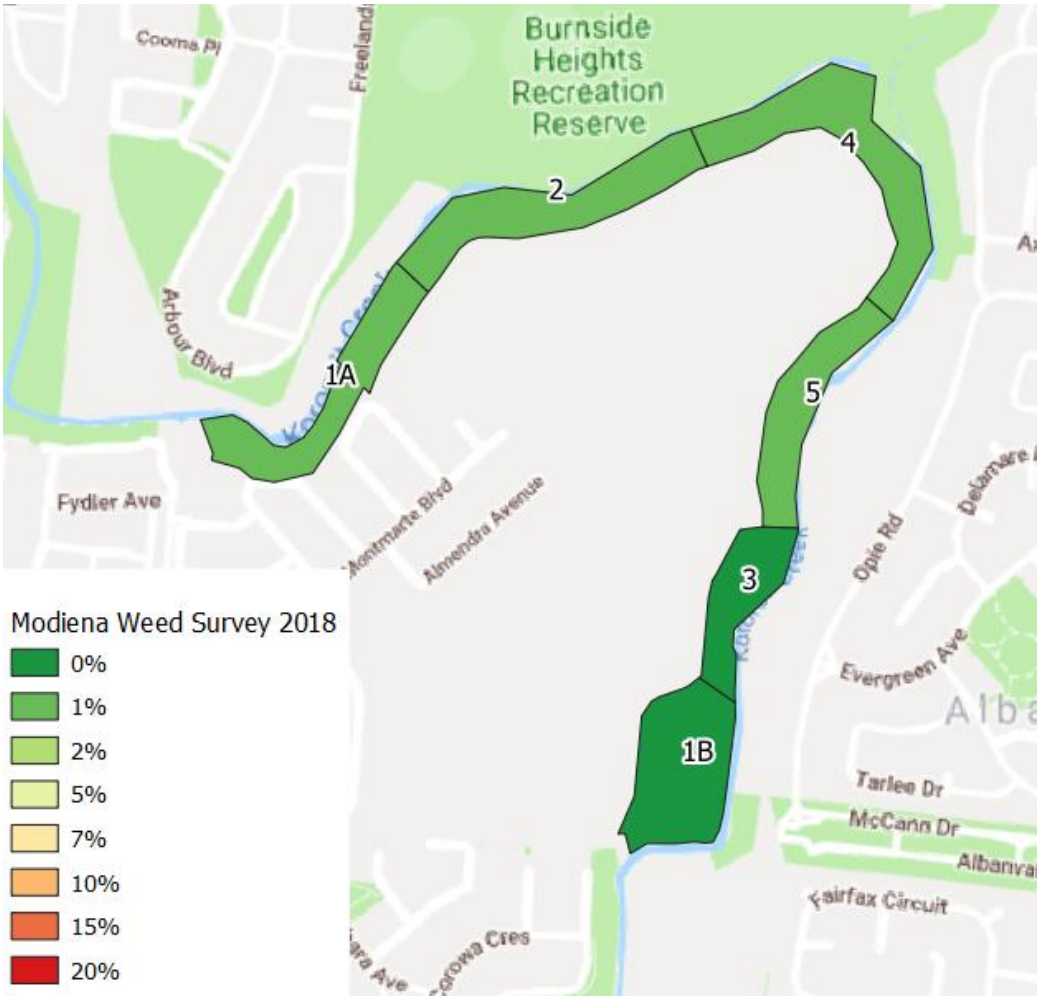
Each plant segment has areoles, which are growing points where new segments, flowers or roots can be produced. Each areole has short tuffs of finely barbed bristles and sometimes one to five sharp, 5 cm long spines. Spines are more common on segments that are older and lower on the plant.



4.13 Sweet Briar - Rosa rubiginosa

Regionally Controlled

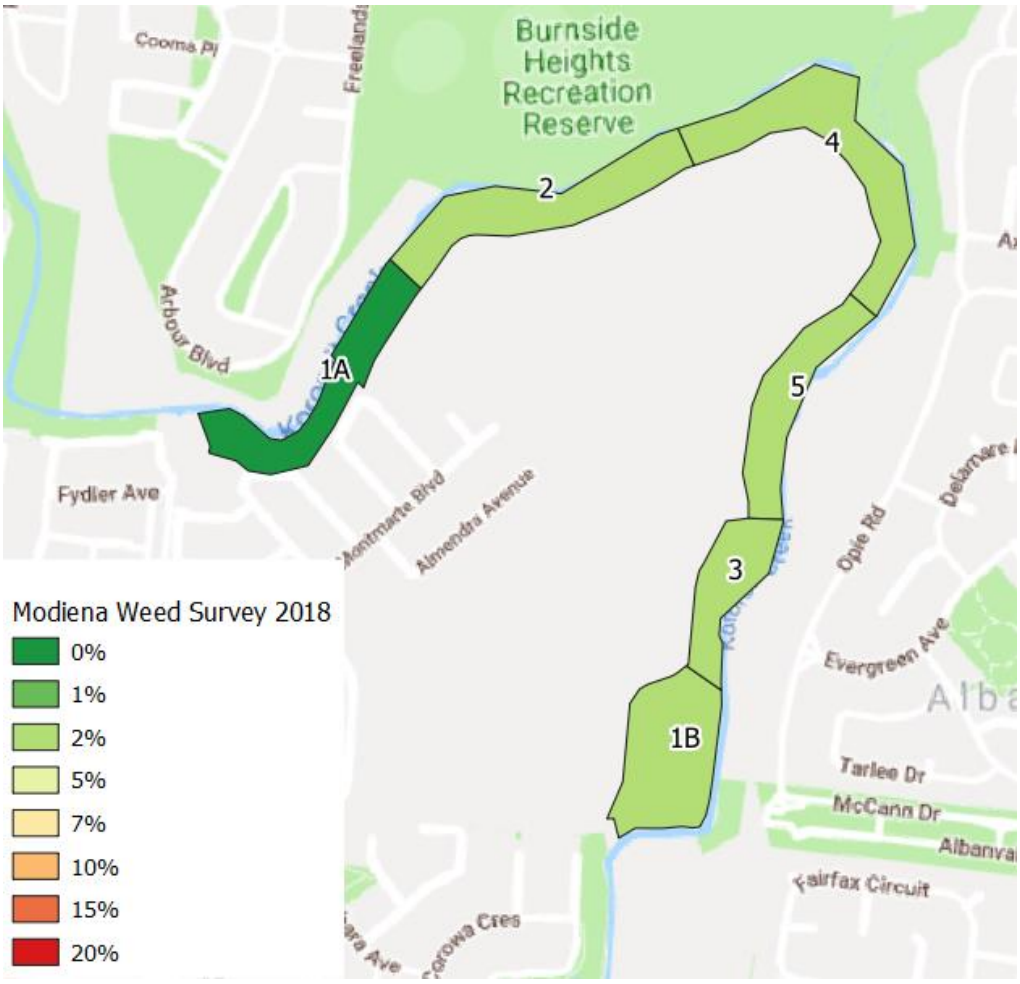
Sweet briar is a perennial woody shrub up to 3m tall. The stem is usually many (and can be up to several hundred) stems arising from the rootstock; erect or scrambling, up to 3 metres high, green and smooth to brown and somewhat roughened, woody, branched, spreading and sometimes trailing, heavily covered with down-curved prickles up to 1.5 cm long.



4. 14 Chilean Needle Grass - Nassella neesiana

Regional restricted

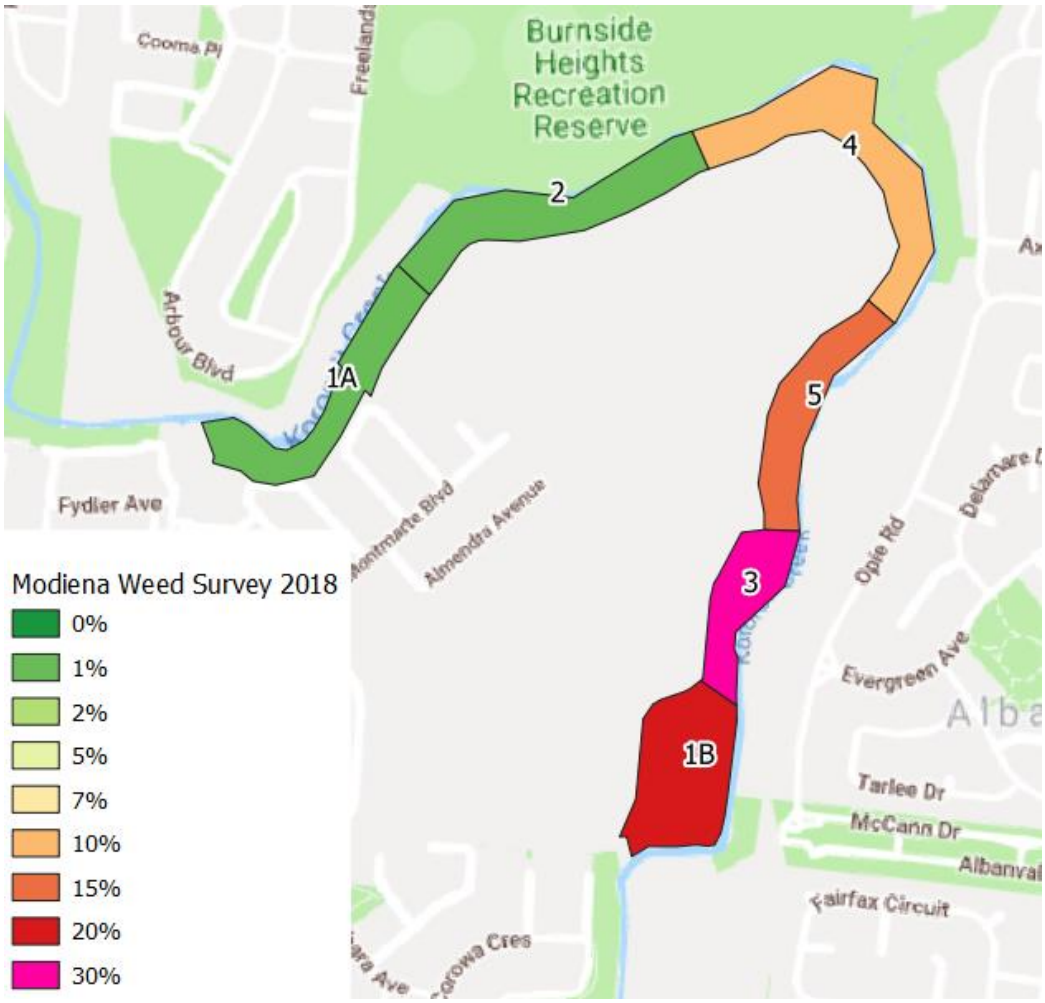
Chilean needle grass is a tussocky perennial in the speargrass group of grasses growing to about 1 m high. It leaves are hairless and are normally grow to 30 cm long and 5 mm wide. With the flowering head being to 40 cm long.



4.15 Toowoomba canary grass - Phalaris aqatica

Not declared or considered noxious

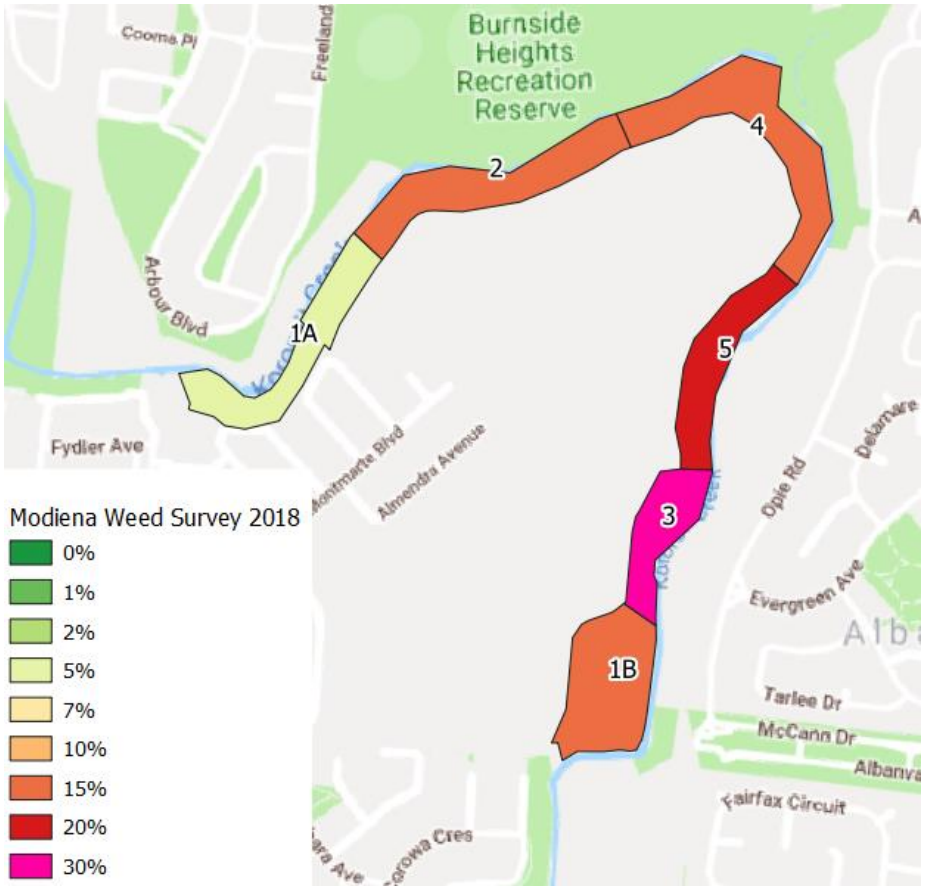
Widely used as a pasture species where annual rainfall exceeds 450 mm. It prefers fertile, seasonally moist sites. Commonly spreads from pastures, road verges and drainage ditches to adjacent indigenous vegetation. Toowoomba canary grass invades dry coastal vegetation, heathland and heathy woodland, lowland grassland and grassy woodland, dry sclerophyll forest and woodland, damp sclerophyll forest, riparian vegetation and freshwater wetlands.



4.16 Serrated Tussock - Nassella trichotoma

High priority established weed* - Regionally Controlled - *Weed of National Significance

Serrated tussock is a long lived perennial grass growing up to 60cm in height with a base of 25cm in diameter. Plant size varies with soil fertility and location. In infertile conditions plants may only reach a height of 15cm. Serrated tussock is shallow rooted with an extensive network of fibrous roots occurring predominantly in the top 20cm of soil. The roots are dense, wiry and fibrous making serrated tussock very difficult to pull out, even when small. Flowering stems emerge from the base of the plant. They are multi-branched and up to 35cm long. The purple colour of the small seeds produces an overall purplish haze to the serrated tussock seed head. Once the seeds have formed, the entire seed head will 'droop' over the tussock towards the ground. Flowering takes place as early as late winter (August) and will continue throughout the spring (September – November). Autumn flowering has been known to occur. Seeds take 8 – 10 weeks to mature, normally occurring throughout the spring and summer months. Once seeds are ripe, the whole flowing stem detaches from the base of the plant and is dispersed by the wind. Seed is dormant and will not germinate for about 6 months.



5.0 Results

Common Name	1A	2	4	5	3	1B	Development
African Boxthorn	0	7 reshooting	3 untreated 18 reshooting	5 reshooting	8 reshooting	0	0
Century Plant	0	5 plants	0	0	0	0	0
Fennel	0	0	1 reshooting	2 reshooting	1 large stand of reshoots	0	0
Prickly Pear	1 cluster	2 cluster	2 cluster	4 cluster	2 cluster	0	0
Sweet Briar	1 cluster	1 cluster	2 cluster	1 cluster	0	0	0
Bridal Creeper	0	0	<2%	<2%	<5%	<5%	<2%
Chilean Needle Grass	0	<2%	<2%	<2%	<2%	<2%	<2%
Artichoke Thistle	<2%	5-15%	5-15%	<5%	5-15%	5-15%	20-30%
Galenia	<5%	10-20%	5-15%	5-10%	<5%	<5%	<5%
Horehound	<2%	<2%	<2%	<5%	5-10%	<2%	<2%
Paterson’s Curse	<5%	<5%	<2%	<2%	<2%	<2%	<2%
Cape weed	<1%	<5%	<2%	<2%	<2%	<2%	<2%
Serrated Tussock	<5%	5-15%	10-20%	15-25%	20-40%	10-20%	10-20%
Spear Thistle	<5%	5-15%	5-15%	5-15%	<5%	<5%	5-15%
Toowoomba canary grass	<1%	<1%	5-15%	20-30%	20-40%	15-25%	5-15%
Scotch Thistle	<5%	<5%	<5%	<5%	<5%	<5%	<5%

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6.0 Summary

6.1 Zone 1A

Low amounts of both native and exotic vegetation can be found within zone 1A. With more than 80% of this zone being bare earth. All species have been very well controlled and there is a low prevalence of all high threat weed species. The species that were recorded have all recently germinated and are small.

6.2 Zone 2

Half the grasses and herbs within this zone have been controlled. While limited controls could be seen on the other half of this zone.

All woody weeds had been controlled with the exception of a cluster of Century Plants still surviving.

Previous work within the native vegetation area has resulted in a reduction of Serrated Tussock and Artichoke Thistle. However, it was noted that numerous plants could be seen reshooting or recently germinated.

Many different thistle spp. intermixed with Galenia was found infesting some of the areas close to the creek.

6.3 Zone 4

This zone varies greatly. With areas dominated by well controlled Serrated Tussock and Toowoomba Canary Grass to large areas of unmanaged thistles. Many different thistle spp. intermixed with Galenia was found infesting some of the areas close to the creek.

3 untreated Boxthorns were noted, along with 18 individuals that are currently reshooting.

6.4 zone 5

Over half of this zone is dominated by Serrated Tussock and Toowoomba Canary Grass. The majority of these species have been well controlled. With large sections of this zone currently covered in dead vegetation.

This zone had the highest prevalence of Prickly Pear, with 4 clusters been seen. These plants all showed signs of previous control.

Only reshooting woody weeds were seen.

6.5 Zone 3

This zone is dominated by Serrated Tussock and Toowoomba Canary Grass. The majority of these species have been well controlled. With large sections of this zone currently been completely covered in dead vegetation. However, the level of uncontrolled high threat grasses and thistle spp. within the native patches is a concern.

This zone had the highest prevalence of Horehound, with 1 large outbreak being the main concern.

Only reshooting woody weeds were seen.

6.5 Zone 1B

Overall this zone is dominated by Serrated Tussock and Toowoomba Canary Grass. With some areas showing signs of previous control and other areas showing no sign.

All thistle spp. have not been controlled. However, other broadleaf weeds such as bridal creeper are dying off.

No woody weeds were recorded.

Note: The next weed survey report is due in March 2019

Appendix 8: Deed of Covenant – Cressy offset site

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17/04/2019 $96.10 CTA

VICTORIA

APPLICATION FOR NOTIFICATION OF COVENANT

Lodged by:
Name: Trust for Nature
Phone: (03) 8631 5808
Address: 5/379 Collins Street, Melbourne
Customer Code: 3562M

TRUST FOR NATURE (VICTORIA) of Level 5, 379 Collins Street, Melbourne established pursuant to the Victorian Conservation Trust Act 1972 **HEREBY APPLIES** pursuant to Section 3A (10) of the Act for entry of a Memorandum of the Covenant contained in the attached Instrument dated the **20 March 2019** which Instrument creates a Covenant pursuant to Section 3A of the said Act over the land marked hatched on the Plan being part of the land contained in Certificate of Title Volume 05736 folio 059.

DATED this 20th day of March 2019

Trust for Nature (Victoria)
by its Solicitor and Agent

.....

Sarah Brugler
5/379 Collins St, Melbourne
An Australian legal practitioner
within the meaning of the Legal
Profession Uniform Law (Victoria)