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Growing Together

COMMONWEALTH SPINY RICE-FLOWER OFFSET AT MOUNT COTTRELL RECREATION RESERVE

ANNUAL REPORT 2021

EPBC REFERENCE 2009/5247

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1 Introduction

As part of the Commonwealth approvals process under the *Environment Protection and Biodiversity Conservation act 1999* (EPBC Act) for the Gourlay Road duplication project within Caroline Springs, Melton City Council was required to establish a Spiny Rice-flower offset area. This offset area was established within Mount Cottrell Recreation Reserve, Mount Cottrell (EPBC reference 2009/5247).

An Offset Management Plan (OMP) for the three hectare management area within Mount Cottrell Recreation Reserve was prepared by consultants (Biosis, 2013) and approved by the Commonwealth Environment Minister on December 12, 2013. The requirements for monitoring and reporting on this offset are set out in Section 4 of the approved OMP, Monitoring and Reporting (Biosis 2013). This current report is guided by these requirements.

Environmental management of the site began in 2012 but Melton City Council commenced the ten years of formal management under the OMP from November 2014.[1] The first full Annual Report was submitted in December 2015, reporting on the November 2014 to October 2015 management year.

This current report provides a summary of management actions undertaken between December 2018 and December 2021. It includes an assessment of the success of these actions, management recommendations and monitoring results for the offset area.

The next round of monitoring will be undertaken in June-October 2022. The next report is due to be submitted to Department of the Environment and Energy (DoEE) by 16th February 2023. DoEE recently agreed to change the annual reporting date for future years to 16th February, so that management actions up to the 31st December can be incorporated into future reports (approved variation to condition 6 of the EPBC approval; Hagan Ganahl, Post Approvals Section of DoEE).

2 Methods

2.1 SUMMARY OF MANAGEMENT ACTIONS

Ongoing management of the offset site has been carried out by suitably qualified environmental management contractors and overseen by Council's Senior Land Management Officer (Tony Herwerth). Detailed Works Summary Sheets for these management actions, dating back to July 2012, have been kept and are available for inspection upon request. A summary of these management actions has been prepared and is provided in this report.

[1] The Deed of Covenant applying to the Spiny Rice-flower offset area was executed 24 September 2014 and, following the execution of the covenant, a bond held by Trust for Nature was released in March 2015. This release of the bond allowed access to the funds intended for the implementation of the 10 year OMP.

It should be noted that delays occurred in the approval of the OMP and the implementation of the Deed of Covenant relative to the timelines conditioned in the Commonwealth permit. These delays have been investigated by the Commonwealth Environment Department and Melton City Council was informed that no further action will be taken over these delays; however, these delays have resulted in some of the monitoring and reporting actions for November 2013-October 2014 (note that the annual management cycle is defined in the OMP to run from November to October the following year) not being completed exactly as prescribed in the OMP. Given that the OMP was not approved until December 2013 and funds for management were not released until March 2015, this was unavoidable.

2.2 GENERAL VEGETATION CONDITION

SITE WALKOVERS

The Melton City Council Land Management Officer has regularly inspected the site at intervals of less than 3 months. Inspection has involved walking over the site in a random meander and then inspecting areas/issues that draw attention in more detail. Feedback is then provided to the Land Management Contractor.

An additional inspection of the general vegetation condition is undertaken annually and includes a walk over the Spiny Rice-flower offset area and the larger area of Mount Cottrell Recreation Reserve.

GENERAL VEGETATION CONDITION MONITORING QUADRATS

To help capture and document changes in vegetation condition, five 10 x 10 m flora quadrats, aligned north-south, were established in representative areas. These comprised two quadrats in the inner zone and three quadrats in the outer zone. Star pickets were used to mark the quadrats and each quadrat was clearly labelled as described in Section 4.1 of the OMP. The location of these quadrats on the site is shown in Figure 1.

Table 1 Monitoring of vegetation condition and Spiny Rice-flower population

Date of monitoring	Monitoring completed
May 2014	Establishment of quadrats
12 August 2014	Vegetation condition monitoring of 5 quadrats
August 2014	Spiny Rice-flower monitoring
1 July 2015	Spiny Rice-flower monitoring
20 October 2015	Vegetation condition monitoring of 5 quadrats
20 July 2016	Spiny Rice-flower monitoring
6 October 2016	Vegetation condition monitoring of 5 quadrats
4 July 2017	Spiny Rice-flower monitoring
19 October 2017	Vegetation condition monitoring of 5 quadrats
20 July 2018	Spiny Rice-flower monitoring
10 October 2018	Vegetation condition monitoring of 5 quadrats
25 July 2019	Spiny Rice-flower monitoring
11 October 2019	Vegetation condition monitoring of 5 quadrats
8 July 2020	Spiny Rice-flower monitoring

26 November 2020	Vegetation condition monitoring of 5 quadrats
15 July 2021	Spiny Rice-flower monitoring
7 October 2021	Vegetation condition monitoring of 5 quadrats

Monitoring dates are provided in Table 1. The next (annual) monitoring of these quadrats will occur in spring (July - November) 2022. In each quadrat the following is recorded: percentage cover of each species, total percentage cover of indigenous species, total percentage cover of weeds, percentage cover of native shrubs, grasses and forbs, percentage cover of introduced shrubs, grasses and forbs and percentage cover of bare ground.

2.4 SPINY RICE-FLOWER MONITORING

Dates of monitoring of the health and survivorship of known Spiny Rice-flower individuals within the reserve are provided in Table 1. Data was recorded into the data collection template provided in the OMP. New plants were also tagged with a unique ID number at this time. Remnant Spiny Rice-flower and the Spiny Rice-flower planted in 2012 had been tagged previously.

The monitoring included recording the health of the plant, whether the plant was flowering and sex of any new plants established since the last monitoring round.

2.3 PHOTO POINT MONITORING

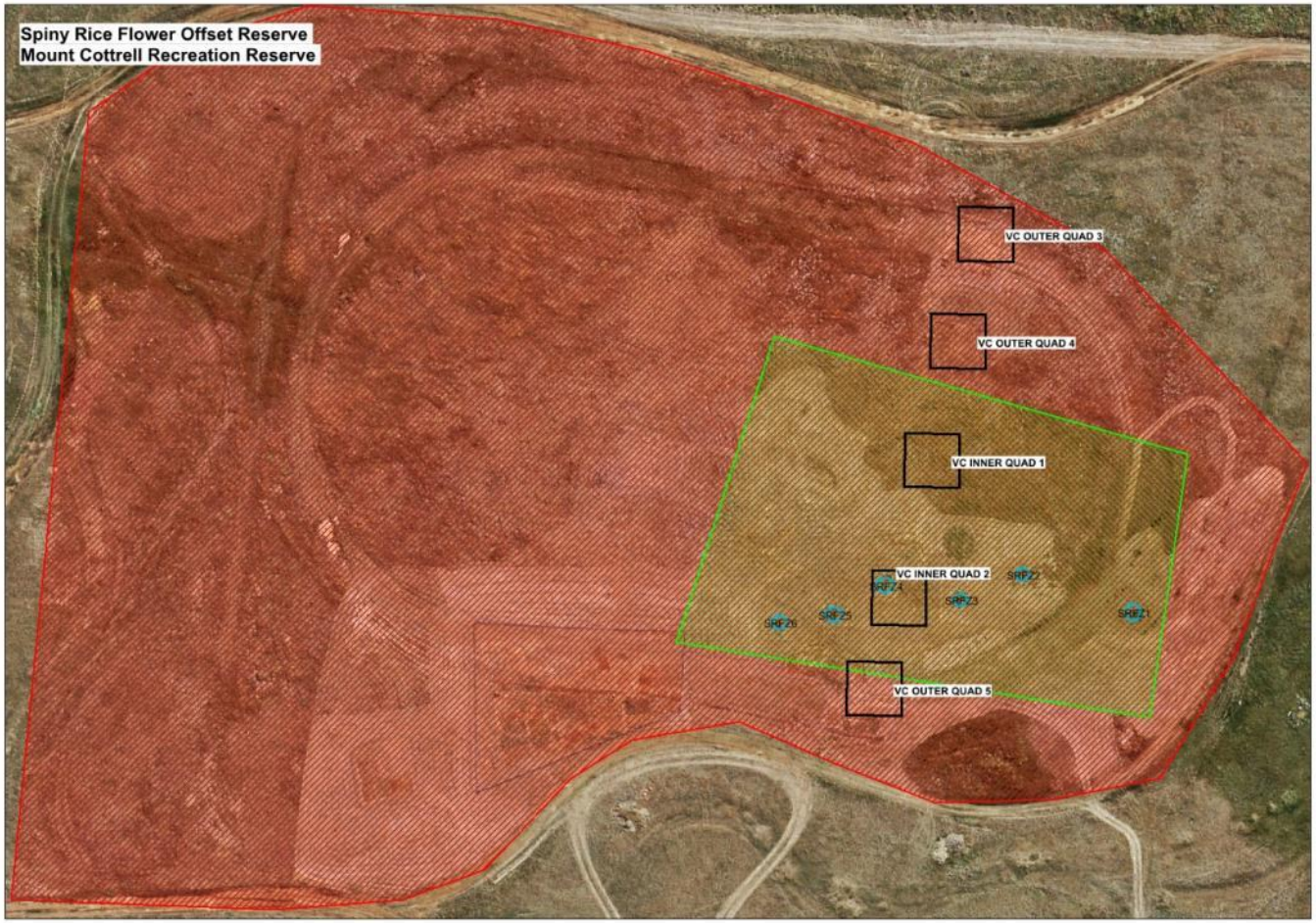
Photo point monitoring included General Vegetation Condition Quadrats only this year. Within each of the five 10 x 10 m quadrats, one photo was taken facing south into each quadrat. Owing to high cover of annual grasses this year, photos of the Spiny Rice-flower plots were not taken because the plants were obscured by the annual grasses in the fore-ground.

2.5 MANAGEMENT RECOMMENDATIONS

REMEDIAL ACTIONS & RECOMMENDED CHANGES TO WORKS PROGRAM

The OMP (Table 3) details the management actions and timing of management actions for the Spiny Rice-flower offset area. The success with which each of these actions has been implemented is addressed in Section 3.5. Discussion is also provided of any remediation required and recommendations for changes to the works program.

Figure 1 Mount Cottrell Recreation Reserve Spiny Rice-flower Management Zones showing General Vegetation Condition Quadrats (VC INNER/OUTER QUAD #) and Spiny Rice-flower zones (SRPZ#)



3. Results

3.1 SUMMARY OF MANAGEMENT ACTIONS

A summary of management actions, drawn from works summary sheets, is presented in Appendix A. These management actions date back to 2012 and include hand weeding, burning, targeted spot spraying, direct seeding, watering, planting of Spiny Rice-flower and indigenous herbs and monitoring.

3.2 MANAGEMENT RECOMMENDATIONS, REMEDIAL ACTIONS & RECOMMENDED CHANGES TO WORKS PROGRAM

A summary of how each of the management actions outlined in Table 3 of the OMP has been implemented is provided in Table 2. An assessment of the success of each action and notes on any required remediation are also provided.

All of the proposed management actions for year 5 (actions 5.1 to 5.10, outlined in the OMP) were successfully completed in 2020.

ECOLOGICAL BURNS

2020

An ecological burn was conducted in autumn was conducted which a total of 0.6 hectares was burnt within the offset site – refer to photo and map (figure 5) As seen in photo, the monitoring quadrats were not bunt within this burn.

The purpose of the burn was to reduce biomass within the grassland, which in turn reduced cover of weeds, increased inter-tussock spaces available for recruitment of indigenous species, including Spiny Rice-flower.

2019

An ecological burn was conducted in autumn 2019 (date: 07 May 2019), during which a total area of 2.852 hectares was burnt – refer to photo and map (Figure 3).

Half of the Spiny Rice-flower zones were burnt and half were not burnt. The purpose of the burn was to reduce biomass within the grassland, which in turn reduced cover of weeds, increased inter-tussock spaces available for recruitment of indigenous species, including Spiny Rice-flower.

2017

An ecological burn was conducted in autumn 2017 (date: 07/04/2017), during which a total area of nine hectares was burnt – refer to photo and map (Figure 2).

All monitoring quadrats were burnt during the burn and the Spiny Rice-flower zones were also burnt (except for plants translocated in 2017). The purpose of the burn was to reduce biomass within the grassland, which in turn reduced cover of weeds, increased inter-tussock spaces available for recruitment of indigenous species, including Spiny Rice-flower.

An ecological burn was not conducted in 2018 because burning is recommended every two-three years.

Figure 2 Map showing extent (red line) of ecological burn conducted in 2017

Photo showing ecological burn in 2017

Figure 3 Map showing extent (red line) of ecological burn conducted in 2019

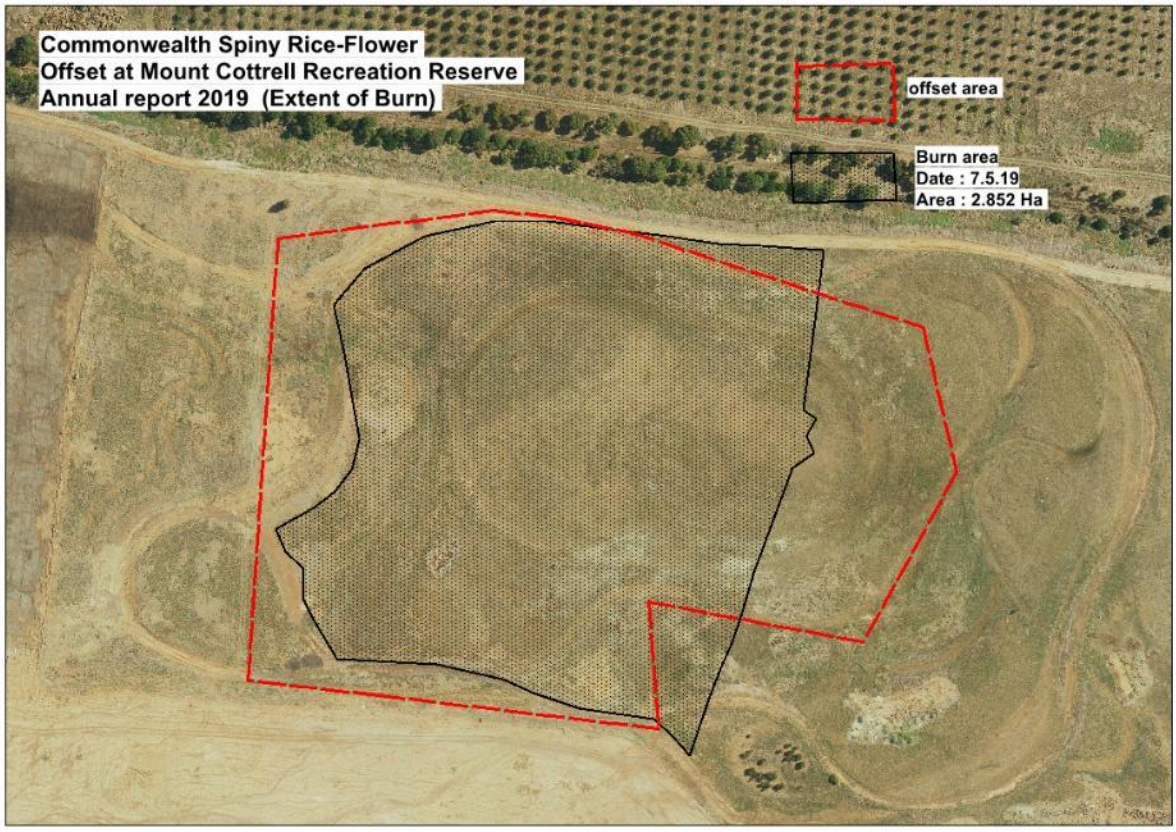


Figure 4 Photo showing ecological burn in 2019

Figure 5 Map showing extent (red line) of ecological burn within the offset site conducted in 2020

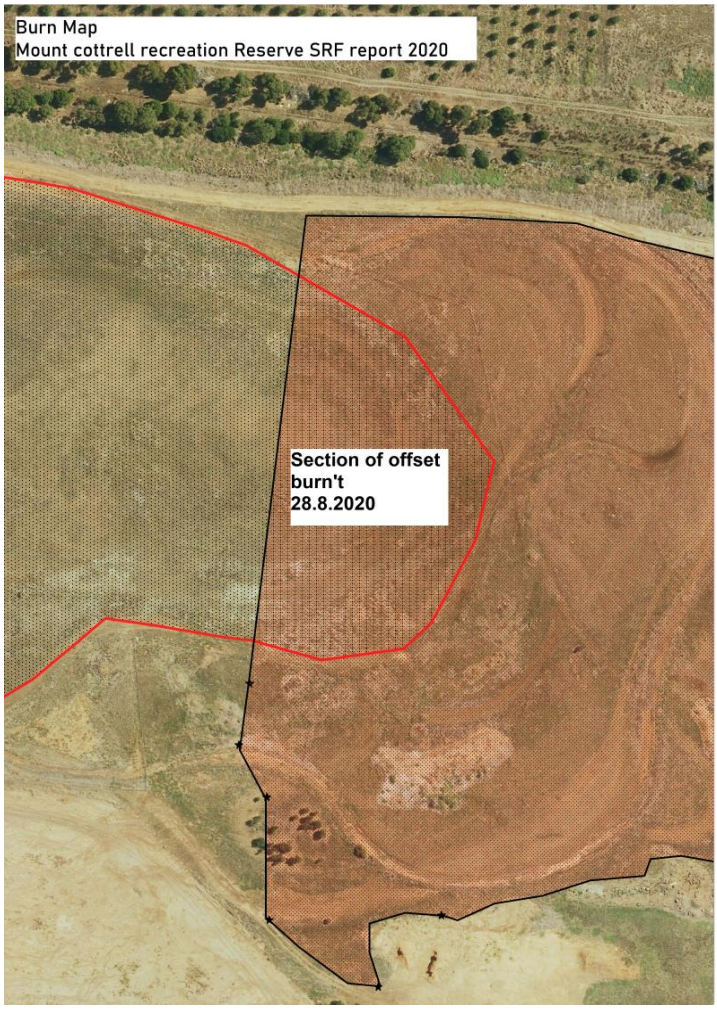


Figure 6 Photo showing ecological burn in 2020

PLANTING AND TRANSLOCATION OF SPINY RICE-FLOWER

2020

No new Plantings of Spiny Rice-flower were undertaken in 2020.

2019

No planting of Spiny Rice-flower was undertaken in 2019. However, two new recruits were recorded (probably from direct seeding undertaken in previous years within Spiny Rice-flower zones. Some salvage and translocation of Spiny Rice-flowers was undertaken by MCC in 2019 but these plants are yet to be included in the monitoring program.

2018

In 2018, an additional 42 Spiny Rice-flower seedlings were planted in the inner zone (plants were propagated from seed collected throughout the Melton Municipality and grown at Western Plains Flora Nursery). No salvage and translocation of Spiny Rice-flowers was undertaken by MCC in 2018.

2017

In 2017, an additional 101 Spiny Rice-flower seedlings were planted in the inner zone (plants were propagated from seed collected throughout the Melton Municipality and grown at Western Plains Flora Nursery). Melton City Council also translocated 59 plants from Greigs Road Reserve, Rockbank to Mount Cottrell Recreation Reserve in consultation with Western Water Corporation. These plants were to be removed as part of Western Water's pipeline project. As the Spiny Rice-flowers were located within the Melbourne Strategic Assessment Program area (MSA), there was no requirement for Western Water to translocate the plants. However, the opportunity arose for Melton City Council to translocate the plants to a secure recipient site before construction on the pipeline commenced. The timing of the translocation was not optimal for translocation of Spiny Rice-flower but timing was constrained by construction deadlines.

PLANTING OF OTHER INDIGENOUS SPECIES

Based on detailed knowledge of the offset site and local area, additional indigenous species were added to the planting schedule provided in the OMP. Table 3 lists the indigenous species planted in the management area between 2015 and 2020. To date, 74 indigenous species have been planted within the offset site and 40139 tube stock and cells have been planted.

Table 4 shows the planting species schedule from the OMP, including which of these species have been planted in the management area to date and how they will be used in subsequent plantings. Essentially, some species were not used because stock could not be sourced, and some indigenous species were added as they have been historically common in the local area but are now threatened with loss due to urban development. Priority was given to locally threatened species where local provenance stock or seed is currently available but where local populations are likely to be removed in the future. Other common species detailed in the OMP planting schedule but not used thus far in plantings will be used in coming years, where possible. Planting of native grasses was considered unnecessary given the extensive natural recruitment of native grasses that has occurred to date.

There are no other management recommendations at this time.

Table 2 Management actions, assessment of success and required remediation

Year	Action number	Action	Successful	Reason why not	Remediation required
1 (2015)	1.1	Install permanent rabbit proof fencing, with gates and signs around perimeter of Outer Zone	yes		no
	1.2	Establish baseline monitoring and photo monitoring points.	Yes		no
	1.3	Undertake supplementary planting /seeding of plains Rice flowers in inner zone	Yes		no
	1.4	Hand weed all introduced species from within plains rice Flower zones	Yes		no
	1.5	Control pest animals (e.g. rabbits, hares) within offset areas and surrounding areas	Yes		no
	1.6	Water newly planted Spiny Rice-flower individuals every 2 weeks for first summer (Dec-Feb)	Yes		no
	1.7	Control perennial grass weeds species over whole offset area	Yes		no
	1.8	Control broadleaf herbaceous weed species over whole offset area	Yes		no
	1.9	Control annual grasses over whole offset area	Yes		no
	1.10	Annual monitoring of spiny rice flower population (flowering period)	Yes		no
	1.11	Annual monitoring of reserve general condition quadrants and photo points	Yes		no
	1.12	Undertake ecological burn within Outer and inner zones	No	Biomass and vegetation cover has not increased sufficiently to warrant burning since the May 2013 Burn	no
2 (2016)	2.1	Update management actions required for Year 2 based on observations made at the end of Year 1.	Yes		no
	2.2	Spot spray all high-threat grass / herb weeds in Outer and Inner Zone before seed set using appropriate herbicide. Control total cover of weeds.	Yes		no
	2.3	Hand weed all introduced species from within Spiny Rice-flower Zones.	Yes		no

Year	Action number	Action	Successful	Reason why not	Remediation required
	2.4	Control pest animals (e.g. rabbits, hares) within the offset and surrounding area (i.e. MCRR).	Yes		no
	2.5	Water planted Spiny Rice-flower individuals.	Yes		no
	2.6	Undertake ecological burn within Outer and Inner Zones as required.	No, considered not required in 2016.		Investigate if autumn burn in 2017 will be beneficial and achievable.
	2.7	Undertake supplementary planting/seeding in the Outer Zone as required.	Yes		no
	2.8	Undertake annual monitoring of Spiny Rice-flower population during flowering period May	Yes		no
	2.9	Plant additional Spiny Rice-flower seedlings in Spiny Rice-flower Zones.	Yes 7 plants planted in the inner zone (zone 6)		no
	2.10	Undertake annual monitoring of reserve including general condition, quadrats and photo monitoring and prepare report.	Yes		no
3 (2017)	3.1	Update management actions required for Year 3 based on observations made at the end of Year 1.	Yes		no
	3.2	Spot spray all high-threat grass / herb weeds in Outer and Inner Zone before seed set using appropriate herbicide. Control total cover of weeds.	Yes		no
	3.3	Hand weed all introduced species from within Spiny Rice-flower Zones.	Yes		no
	3.4	Control pest animals (e.g. rabbits, hares) within the offset and surrounding area (i.e. MCRR).	Yes		no
	3.5	Water planted Spiny Rice-flower individuals.	Yes		no
	3.6	Undertake ecological burn within Outer and Inner Zones as required.	Yes autumn burn conducted		no
	3.7	Undertake supplementary planting/seeding in the Outer Zone as required.	Yes		no

Year	Action number	Action	Successful	Reason why not	Remediation required
	3.8	Undertake annual monitoring of Spiny Rice-flower population during flowering period May	Yes		no
	3.9	Plant additional Spiny Rice-flower seedlings in Spiny Rice-flower Zones.	Yes		no
	3.10	Undertake annual monitoring of reserve including general condition, quadrats and photo monitoring and prepare report.	Yes		no
4 (2018)	4.1	Update management actions required for Year 4 based on observations made at the end of Year 3.	Yes		no
	4.2	Spot spray all high-threat grass / herb weeds in Outer and Inner Zone before seed set using appropriate herbicide. Control total cover of weeds.	Yes		no
	4.3	Hand weed all introduced species from within Spiny Rice-flower Zones.	Yes		no
	4.4	Control pest animals (e.g. rabbits, hares) within the offset and surrounding area (i.e. MCRR).	Yes		no
	4.5	Water planted Spiny Rice-flower individuals.	Yes		no
	4.6	Undertake ecological burn within Outer and Inner Zones as required.	No	Burn conducted last year (2017)	no
	4.7	Undertake supplementary planting/seeding in the Outer Zone as required.	Yes		no
	4.8	Undertake annual monitoring of Spiny Rice-flower population during flowering period May	Yes		no
	4.9	Plant additional Spiny Rice-flower seedlings in Spiny Rice-flower Zones.	Yes		no
	4.10	Undertake annual monitoring of reserve including general condition, quadrats and photo monitoring and prepare report.	Yes		no
5 (2019)	5.1	Update management actions required for Year 5 based on observations made at the end of Year 4.	Yes		no
	5.2	Spot spray all high-threat grass / herb weeds in Outer and Inner Zone before seed set using appropriate herbicide. Control total cover of weeds.	Yes		no
	5.3	Hand weed all introduced species from within Spiny Rice-flower Zones.	Yes		no
	5.4	Control pest animals (e.g. rabbits, hares) within the offset and surrounding area (i.e. MCRR).	Yes		no
	5.5	Water planted Spiny Rice-flower individuals.	Not applicable	Not necessary as no new planting this year.	no

Year	Action number	Action	Successful	Reason why not	Remediation required
	5.6	Undertake ecological burn within Outer and Inner Zones as required.	Yes		no
	5.7	Undertake supplementary planting/seeding in the Outer Zone as required.	No	Not considered necessary as well exceeding target.	no
	5.8	Undertake annual monitoring of Spiny Rice-flower population during flowering period May	Yes		no
	5.9	Plant additional Spiny Rice-flower seedlings in Spiny Rice-flower Zones.	No	Not considered necessary as well exceeding target.	no
	5.10	Undertake annual monitoring of reserve including general condition, quadrats and photo monitoring and prepare report.	Yes		No
6 (2020)	6.1	Update management actions required for Year 5 based on observations made at the end of Year 4.	Yes		No
	6.2	Spot spray all high-threat grass / herb weeds in outer and inner zone before seed set using appropriate herbicide. Control total cover of weeds.	Yes		No
	6.3	Hand weed all introduced species from within Spiny Rice-flower Zones.	Yes		No
	6.4	Control pest animals (e.g. rabbits, hares) within the offset and surrounding area (i.e. MCRR).	Yes		No
	6.5	Water planted Spiny Rice-flower individuals Every 2 weeks for first summer	Yes		No
	6.6	Undertake ecological burn within Outer and Inner Zones as required. Every 1-3 years.	Yes		No
	6.7	Undertake supplementary planting/seeding In the Outer Zone. See appendix 1 of the Offset Management Plan	Yes		No
	6.8	Undertake annual monitoring of Spiny Rice-flower population during flowering period May	Yes		No
	6.9	Plant additional Spiny Rice-flower seedlings in Spiny Rice-flower Zones.	No	Not available	No
	6.10	Undertake annual monitoring of reserve including general condition, quadrats and photo monitoring and prepare report.	Yes		No
7 (2021)	7.1	Update management actions required for Year 6 based on observations made at the end of Year 5.	Yes		No

Year	Action number	Action	Successful	Reason why not	Remediation required
	7.2	Spot spray all high-threat grass / herb weeds in outer and inner zone before seed set using appropriate herbicide. Control total cover of weeds.	Yes		No
	7.3	Hand weed all introduced species from within Spiny Rice-flower Zones.	Yes		No
	7.4	Control pest animals (e.g. rabbits, hares) within the offset and surrounding area (i.e. MCRR).	Yes		No
	7.5	Water planted Spiny Rice-flower individuals Every 2 weeks for first summer	Yes		No
	7.6	Undertake ecological burn within Outer and Inner Zones as required. Every 1-3 years.	Yes		No
	7.8	Undertake supplementary planting/seeding In the Outer Zone. See appendix 1 of the Offset Management Plan	Yes		No
	7.9	Plant additional Spiny Rice-flower seedlings in Spiny Rice-flower Zones.	No	No plants available	No
	7.10	Undertake annual monitoring of reserve including general condition, quadrats and photo monitoring and prepare report.	Yes		No

Table 3 Species planted within the Offset Area up to December 2019

Scientific name	Common name	2015	2016	2017	2018	2019	2020	Grand Total
Arthropodium fimbriatum	Nodding Chocolate-lily		100				100	200
Arthropodium minus	Small Vanilla-lily		100					100
Arthropodium strictum	Chocolate Lily	200	100	100	100	100	250	850
Asperula conferta	Common Woodruff		100	100	100	100		400
Brachyscome dentata	Lobe-seed Daisy	200	50	1100	100	800	50	2300
Brachyscome paludicola	Daisy	200	100	100			100	500
Bulbine bulbosa	Bulbine Lily	200	200	100	100	350	100	1050
Bulbine glauca	Rock Lily	200	100	100	100	550	100	1150
Caesia calliantha	Blue-grass Lily		300		100	200		600
Calocephalus citreus	Lemon Beauty-heads	200	50	100	100	600		1050
Calocephalus lacteus	Milky Beauty-heads		50	100	100	100	50	400
Calotis anthemoides	Cut-leaf Burr-daisy		50	100	100		50	300
Calotis scabiosifolia	Rough Burr-daisy		50	100	100		50	300
Calotis scapigera	Tufted Burr-daisy		50	100	100		50	300
Chrysocephalum apiculatum	Common Everlasting	200	300	400		500	100	1500
Chrysocephalum semipapposum	Clustered Everlasting	50		100			200	350
Chrysocephalum semipapposum green form	Clustered Everlasting		200		100	250	50	600
Chrysocephalum semipapposum grey form	Clustered Everlasting		50		100	250		400
Coronidium gunnianum			50	100				150
Craspedia sp. 2	Derrinallum Billy-buttons			25				25
Craspedia variabilis	Common Billy-buttons		50	350	100			500
Cullen parvum	Small Scurf-pea	200	50		100	50	100	500
Cullen tenax	Tough Scurf-pea		50	100	100	50	100	400
Cynoglossum suaveolens	Sweet Hound's-tongue		25		100	100	50	275
Desmodium varians	Slender Tick Trefoil			100	100		100	300
Dianella longifolia	Pale Flax-lily		200	100	100	600	50	1050
Dianella revoluta	Black-anther Flax-lily				100	200		300
Eryngium vesiculosum	Prickfoot		25	100	100	200		425
Glycine latrobeana	Clover Glycine				50		200	250
Glycine tabacina	Variable Glycine			100	100	50	200	450
Goodenia gracilis	Slender Goodenia				100	100		200
Goodenia pinnatifida	Cut-leaf Goodenia		100		100	300	50	550
Kennedia prostrata	Running Postman		25		100	200	50	375
Leiocarpa panaetioides	Woolly Buttons	100	100	100	100	525		925
Leptorhynchos squamatus	Scaly Buttons	500	100	300	100	500		1500
Leptorhynchos tenuifolius	Wiry Buttons				100	500	50	650
Linum marginale	Native Flax	100		600	100	500		1300
Lobelia pratioides	Poison Lobelia		50	100	100	50	50	350
Lotus australis	Austral Trefoil				100		300	400

Scientific name	Common name	2015	2016	2017	2018	2019	2020	Grand Total
Mentha australis	River Mint			100	100	25		225
Mentha diemenica	Slender Mint				100	25		125
Microseris lanceolata	Yam Daisy	150	100	100	100	300	100	850
Minuria leptophylla	Minnie Daisy		100	600	100	525	250	1575
Nicotiana suaveolens	Austral Tobacco					25		25
Pelargonium rodneyanum	Magenta Stork's-bill	50	100	100	100	600	50	1000
Pimelea curviflora	Rice-flower		25		100	100	50	275
Pimelea glauca	Smooth Rice-flower		25		100	100	50	275
Pimelea spinescens subsp. spinescens	Spiny Rice-flower	103		101				204
Plantago gaudichaudii	Narrow Plaintain		100		100	250		450
Plantago varia	Variable Plaintain		100		300	250	50	700
Poa sieberiana	Tussock Grass			100	100	500	100	800
Podolepis jaceoides	Showy Podolepis	700	200	100	100	525	100	1725
Ptilotus macrocephalus	Feather-heads		25	100	100	100	25	350
Ptilotus spathulatus	Ptilotus		100	100	100	300	500	1100
Pycnosorus chrysanthus	Golden Billy-buttons	50	200	100	100	275	250	975
Pycnosorus globosus	Drumsticks	50	300	100	100	275	250	1075
Ranunculus lappaceus	Australian Buttercup		25			100		125
Rumex bidens	Mud Dock				100			100
Rumex dumosus	Wiry Dock				100			100
Rutidosis leptorhynchoides	Button Wrnklewort	200	300	100	100	250	500	1450
Senecio cunninghamii var. cunninghamii	Bushy Groundsel					50	100	150
Senecio macrocarpus	Large-headed Groundsel			50	50	300	50	450
Solenogyne dominii	Smooth Solenogyne					100		100
Stackhousia subterranea	Grassland Candles						50	50
Teucrium racemosum	Grey Germander		25	100	100	50	50	825
Tricoryne elatior	Yellow Rush Lily					150	25	175
Triptilodiscus pygmaeus	Common Sunray			100	100	250		450
Velleia paradoxa	Spur Velleia	200	100	100	100	450	50	1000
Veronica gracilis	Slender Speedwell	50		25	25	25		125
Vittadinia cuneata var. cuneata	Fuzz Weed					50		50
Wahlenbergia capillaris	Bluebell				5			5
Wahlenbergia stricta	Tall Bluebell				5			5
Xerochrysum viscosum	Sticky Everlasting		25					25
Grand Total		3903	4625	6751	5535	14425		**40139**

Table 4 Species listed in the Offset Management Plan for planting

Life-form	Plant species listed in OMP	Planting date or reason for not planting to date
Grasses	*Anthosachne scabra* Common Wheat-grass	To be direct seeded when seed is obtained
	Austrostipa bigeniculata Kneed Spear-grass	To be direct seeded after herb establishment, council has access to extremely large quantities of the seed of this species
	Austrostipa scabra Rough Spear-grass	To be direct seeded after herb establishment, council has access to extremely large quantities of the seed of this species
	Bothriochloa macra Red-leg Grass	To be direct seeded after herb establishment
	Rytidosperma caespitosum Common Wallaby-grass	To be direct seeded after herb establishment
	Rytidosperma duttonianum Brown-back Wallaby-grass	To be direct seeded after herb establishment
	Themeda triandra Kangaroo Grass	To be direct seeded after herb establishment
Forbs	*Calocephalus citreus* Lemon Beauty-heads	Planted 2015 and 2016 and 2017 and 2018
	Haloragis heterophylla Varied Raspwort	To be planted when rainfall increases
	Leptorhynchos squamatus Scaly Buttons	Planted 2015 and 2016 and 2017 and 2018
	Plantago gaudichaudii Narrow Plantain	Plant 2016 and 2018
	Solenogyne dominii Smooth Solenogyne	Plant not available in 2015 or 2016
	Tricoryne elatior Yellow Rush-lily	Plant unavailable, seed defies attempts at germination may be able to source from plants rescued from construction areas
	Velleia paradoxa Spur Velleia	Planted 2015 and 2016 and 2018
	Wahlenbergia luteola Bronze Bluebell	To be direct seeded

3.3 GENERAL VEGETATION CONDITION

SITE WALKOVERS

General vegetation condition was judged to be good on the October 2020 walkover, with very little cover of declared noxious weeds (listed under the Victorian *Catchment and Land Protection Act 1994*) or high threat[2] environmental weeds. It was also noted that there was no sign of rabbit impact, levels of biomass were good, with good inter-tussock space still remaining but will need a burn in the near future. There was a variety of indigenous grasses and forbs present. The cover of annual introduced grasses was much lower than recorded in 2016 but an increase over 2019. This is most likely owing to the relatively wet and cooler spring conditions. Dominant introduced grasses included: *Avena barbata* (Bearded Oat), *Vulpia bromoides* (Squirrel-tail Fescue) and *Lolium rigidum* (Wimmera Rye-grass) and a very small population of *Nassella neesiana* (Chilean Needle Grass).

GENERAL VEGETATION CONDITION MONITORING QUADRATS

In November 2020, overall weed cover varied between <1% and <12% cover within the monitoring quadrats (Table 5). Weeds comprised a combination of forbs (< 5% cover) and grasses (1-7% cover) but no woody weeds were present.

Overall indigenous species cover within the quadrats varied from 71% to 98%. The most common native grasses within the quadrats were *Themeda triandra*, *Austrostipa* and *Rytidosperma* species. Other native grasses, less common at the site, included *Chloris truncata*. A variety of native forbs were recorded but their cover was low (typically 1 - 8% cover).

Comparing data from 2020 to previous years, the following is noted:

- Total vegetation cover was comparatively higher in all quadrats compared 2019, most likely owing to the burning of the site in 2019 and the increase in rainfall during the typical spring growth period and when the vegetation monitoring was undertaken;
- Cover of weed species decreased substantially between 2015 and 2020 in all quadrats except quadrat 3 (Figure 4). In 2020, weed cover was very low across all five quadrats (<5%).

Species richness of indigenous flora almost doubled between 2015 (15 species) and 2016 (29 species), most likely attributed to supplementary planting over the past 3 years. Considering the high rain fall of 2020, the decreasing number of percentage weed cover compared to other high rainfall years (2016), weed cover results are very positive and can be attributed to good long term management of the grassland.

Full results of the flora survey are shown in Table 5 and presented in Figure and Figure 5

[2] High threat according to the Plains Grassland Ecological Vegetation Class Benchmark.

Figure 7 Percentage cover of Introduced species in quadrats 1-5 in 2015 to 2020

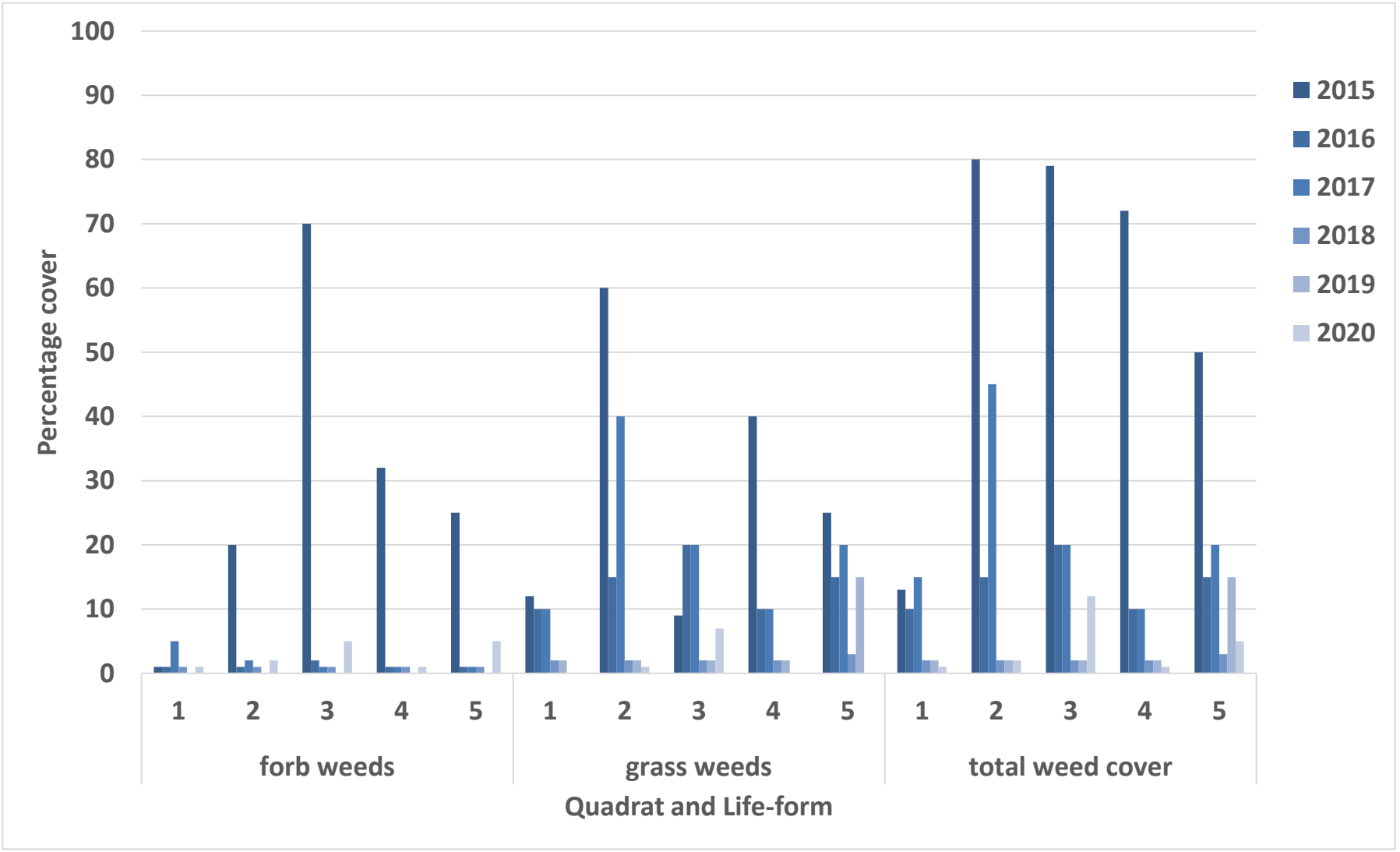


Figure 8 Percentage cover of native flora species in quadrats 1-5 in 2015 to 2020

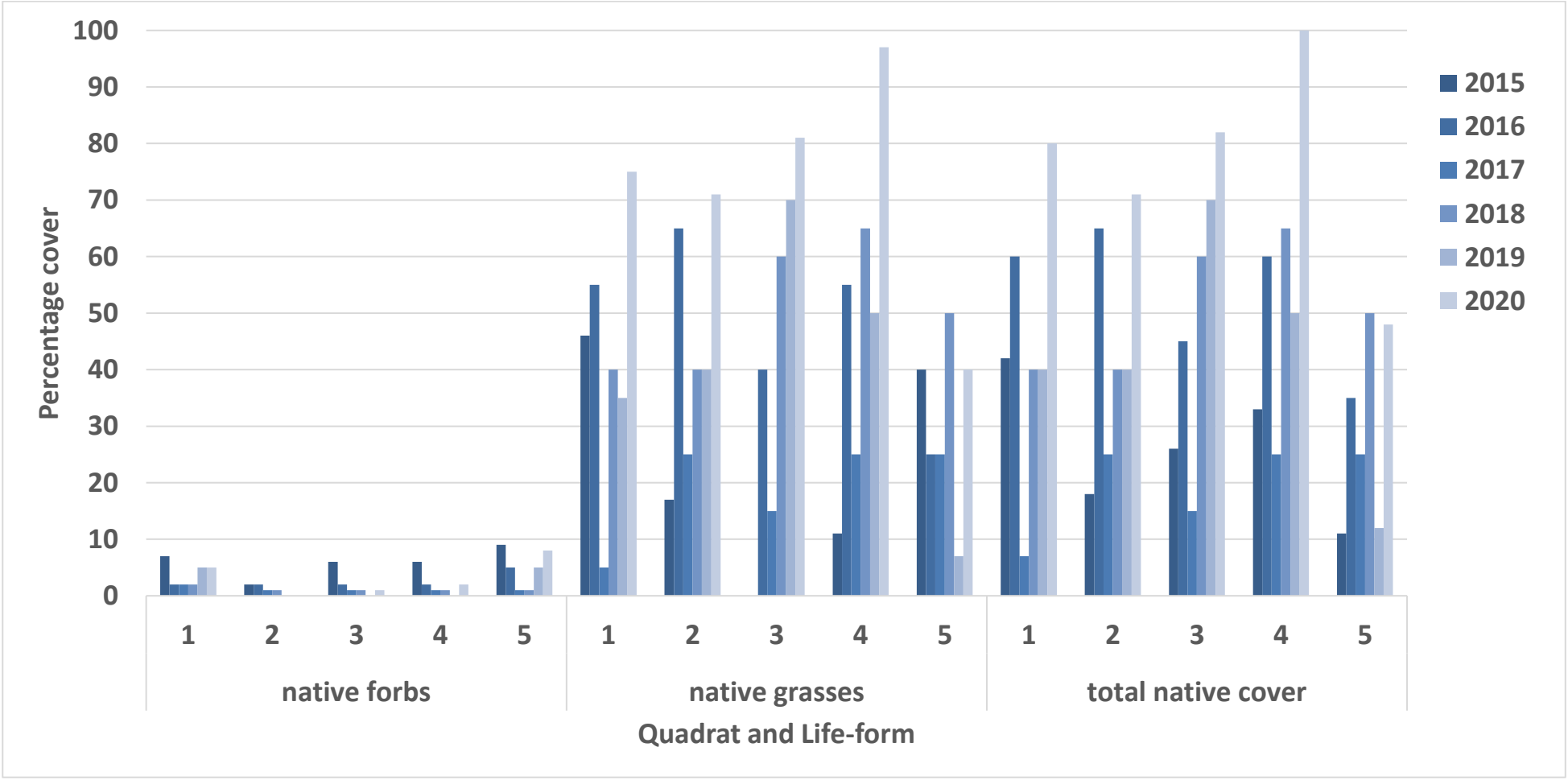


Table 5 General vegetation condition survey results for the 10 x 10 m quadrats 2020

Introduced species

	understorey veg	Quadrats % Cover				
		inner zone		outer zone		
		1	2	3	4	5
weeds	*Avena barbata*		<1	5%		
	Cirsium vulgare			<1		
	Dactylis glomerata			<1		
	Helminthotheca echioides			<1		
	Hypochaeris radicata					5%
	Plantago lanceolata	<1	<1	<1	<1	
	Trifolium sp. (not flowering)			<1		
	Vulpia bromoides		<1	<1		
	Woody weeds		0%	0%	0%	0%
	Herb weeds (other than grasses)	1%	<2	<5	<1	5%
	Grass weeds		<1	<7	0%	0%
	OVERALL weed cover	1%	3%	12%	1%	5%

Native species

Native grasses	75%	71%	81%	98%	40%
Austrostipa species	50%	30%	20%	3%	20%
Rytidosperma species	20%	40%	1%	5%	20%
Isolepis marginata					
Juncus bufonius					
Themeda triandra	5%	0	60%	90%	
Chloris truncata		1%			
Native forbs	5%		1%	2%	8%
Asperula conferta				1%	
Convolvulus angustissimus					1
Eryngium ovinum	3%			1%	
Goodenia pinnatifida	<1				
Hypericum gramineum					1
Podolepis linearifolia			1		
Rutidosus leptorhynchoides					5
Whalenbergia species	<1				<1
Native shrubs (small < 1 m)	0%	1%	0%	0%	0%
Native climbers/scramblers	0%	0%	0%	0%	0%
OVERALL native understorey cover	80%	71%	82%	100%	48%

3.4 SPINY RICE-FLOWER MONITORING

The annual monitoring of Spiny Rice-flower was completed on 08 July 2020 and included monitoring of all known plants (i.e. remnants, those planted/translocated in 2012, 2014, 2016, 2017, 2018 and 2019).

Spiny Rice-flower survey results for 2020 are presented in Figure to Figure 7. Full results are presented in Appendix B. The current number of living plants exceeds the long-term target of 28 plants (currently there are 68 living plants with 60 possibly dormant plants i.e. not yet re-sprouted following the burn; refer to Figure) which is eight individuals more than the previous year (2019).

The majority of living plants (82%) were in good condition and only 15 individual plants that were not flowering (refer to Figure 7). This is a substantial increase compared to the previous year.

Figure 9: Number of Spiny Rice Flower plants alive and dead in 2021 by plant sex

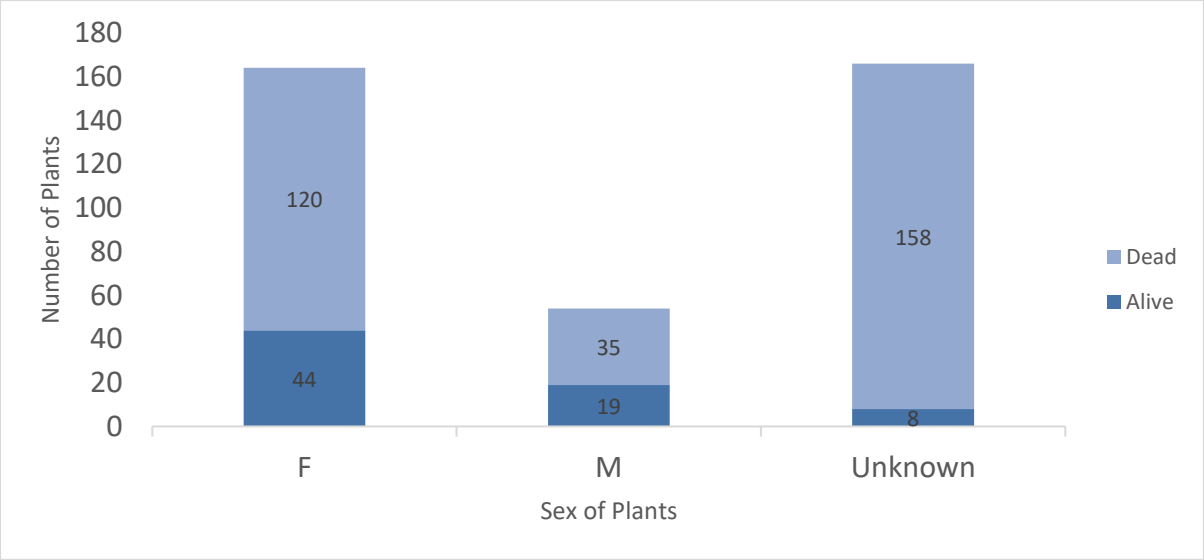


Figure 10: Number of Spiny Rice Flower plants alive and dead in 2020 in each planting zone

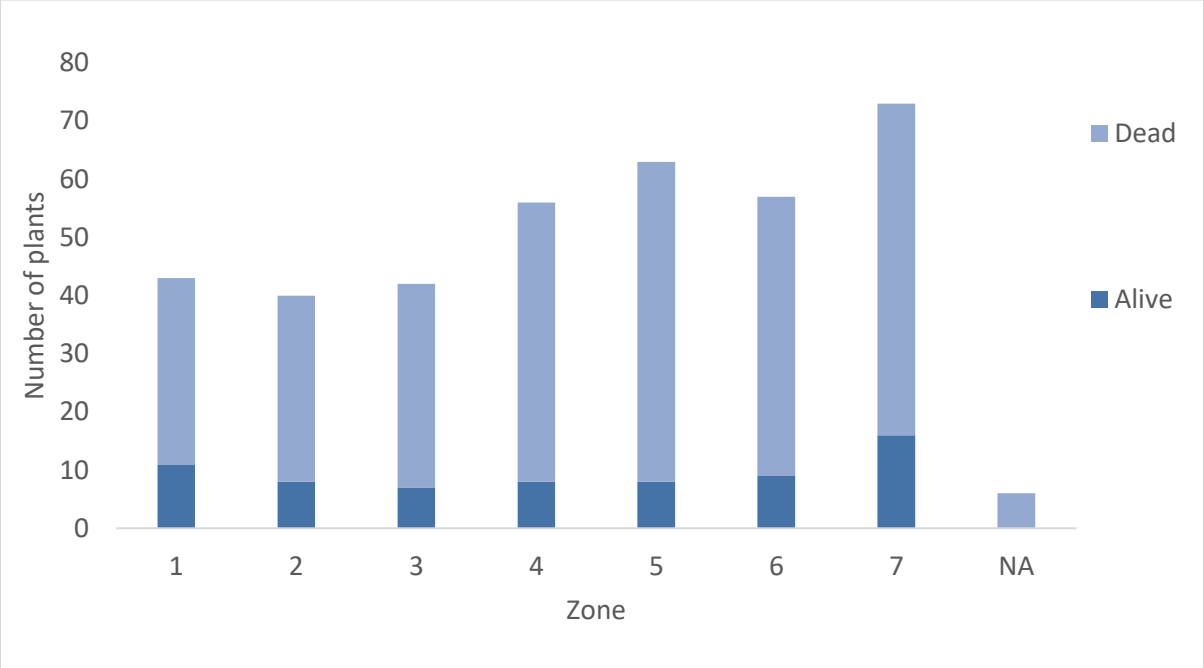


Figure 11: Number of living Spiny Rice Flower plants flowering in 2021

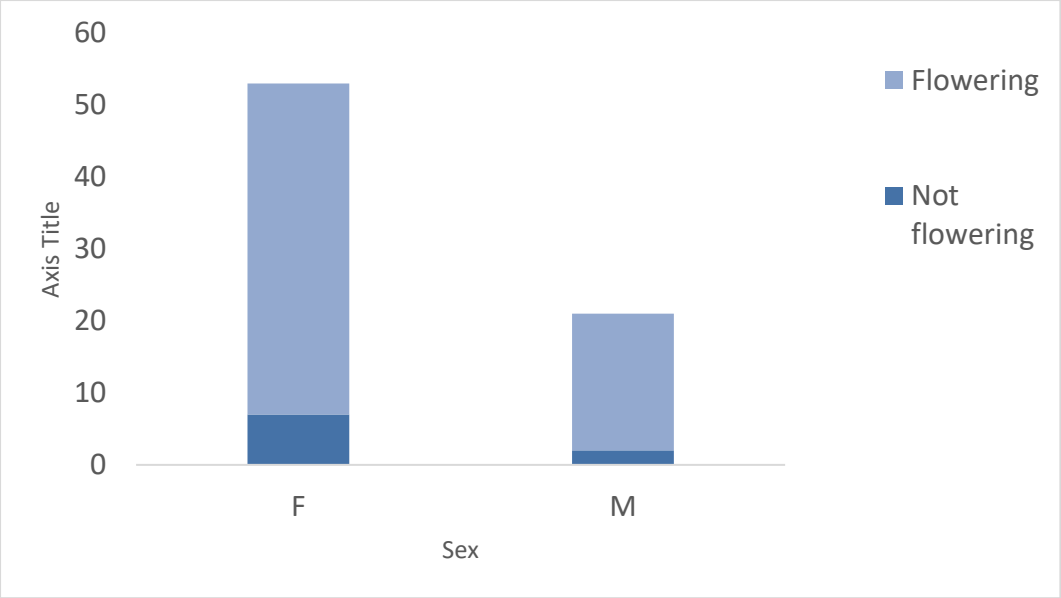


Figure 11: Number of living Spiny Rice Flower plants flowering in 2012

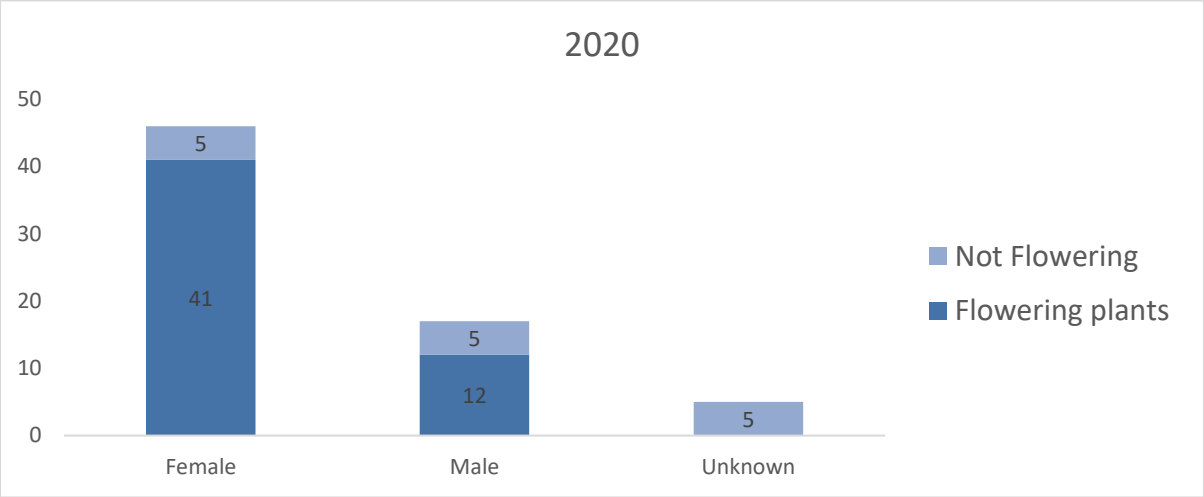


Figure 12: Percentage of living Spiny Rice Flower plants in each condition category in 2020

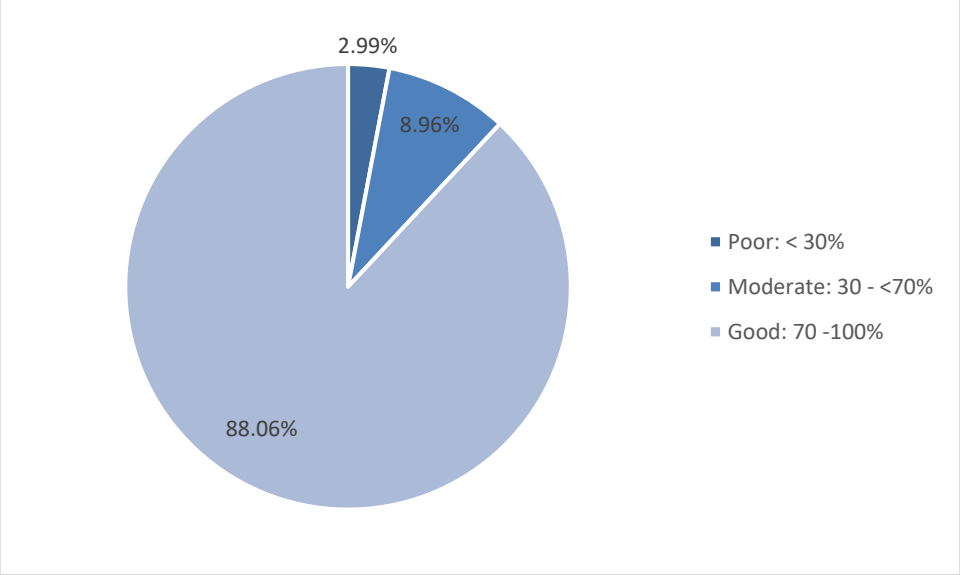
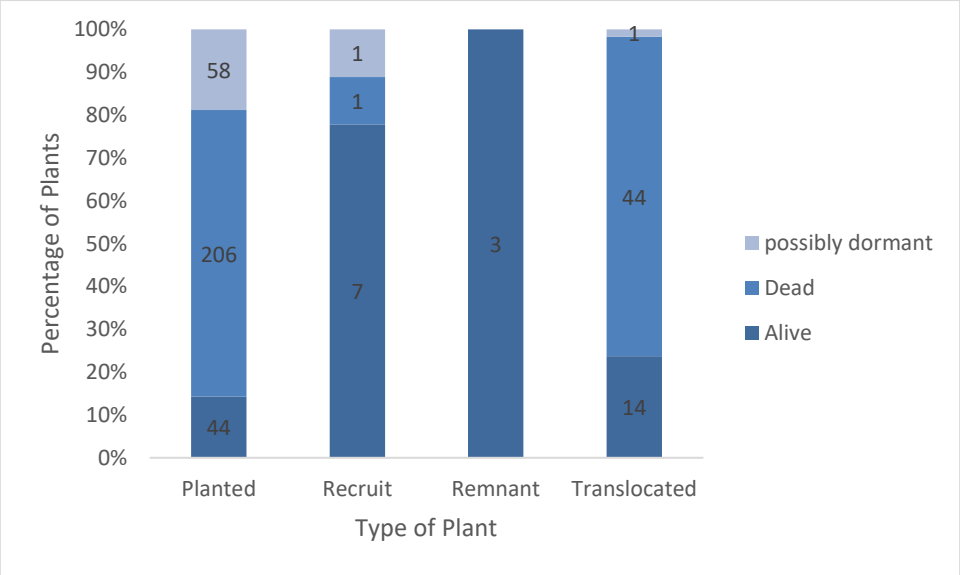


Figure 13: Percentage of plants dead and alive by plant type in 2020 (remnant, planted, translocated or natural recruits)



4. CONCLUSION

This report describes the work done to date in protecting and improving the Spiny Rice-flower offset site at Mount Cottrell Recreation Reserve. Skilled environmental management of the grassland community at the site has been occurring since 2012 with substantial planting and direct seeding as well as augmenting of the Spiny Rice-flower population at the site.

This is the seventh OMP monitoring report to be prepared for the site. The monitoring to date demonstrates an improvement in vegetation condition at the site, especially through difficult times, as shown by an increase in percentage cover of native species, decrease cover of weed species and an increase in species richness of indigenous flora within monitoring quadrats. The current population of Spiny Rice-flower includes 71 living plants (and possibly more dormant), well above the target of 28 plants. This year saw an increase in the majority of living plants that were in good condition and flowering in July 2021 with high percentage of foliage cover compared to previous years (95% in 2021 compared to 92% in 2020 and 2019).

Melton City Council will undertake the next round of monitoring in July 2022 (Spiny Rice-flower) and October 2022 (flora quadrats and photo-point monitoring) and continue to manage the reserve in accordance with the OMP. The next report is scheduled to be submitted to DoEE by 16th February 2022.

APPENDIX A: MONITORING PHOTOS 2015 TO 2021

See attached

BURNING OF OFFSET AREA MARCH 2013

TRUST FOR NATURE REPRESENTATIVES INSPECTING SPINY RICE-FLOWER PLANTS WITH MELTON'S COORDINATOR OF ENVIRONMENTAL SERVICES, ADRIAN MURPHY, JAN 2013.

APPENDIX B: SUMMARY OF MANAGEMENT ACTIONS PERFORMED WITHIN OFFSET ZONE TO DATE, INVOICE NUMBER REFERS TO INVOICE RECORDS KEPT BY MELTON CITY COUNCIL.

Date	Invoice no	Activity performed
Jul 2012	4613	Sensitive brush cut of weeds looking for Spiny Rice-flower
Aug 2012	4646	Guarded remnant Spiny Rice-flower plants; biomass reduction with brush cutters and rakes
Aug 2012	4656	Sorted Spiny Rice-flower for planting into male and female to plants
Aug 2012	4676	Planted Spiny Rice-flower, large stock, local provenance, commercially sourced; erected fencing around planted stock
Aug 2012	4685	Planting Spiny Rice-flower; watering
Sep 2012	4697	Watering Spiny Rice-flower
Sep 2012	4731	Watering Spiny Rice-flower
Sep 2012	4753	Watering Spiny Rice-flower
Sep 2012	4775	Watering Spiny Rice-flower; modified fencing
Nov 2012	4864	Watering Spiny Rice-flower; spot spray Chilean Needle grass and Serrated Tussock
Nov 2012	4912	Watering Spiny Rice-flower
Oct 2012	4949	Watering Spiny Rice-flower
Mar 2013	5223	Watering Spiny Rice-flower
Apr 2013	5275	Watering Spiny Rice-flower
Apr 2013	5326	Hand weeding; temporary rabbit proof fence construction; watering Spiny Rice-flower
Jun 2013	5382	Watering Spiny Rice-flower
Jun 2013	5402	Burning offset area and surrounds
Jul 2014	6447	Direct seeded Spiny Rice-flower into offset area
Aug 12 2014	6426	Hand weed; and set up monitoring quadrats; carried out monitoring
Aug 12 2014	6467	Hand weed Spiny Rice-flower
Aug 12 2014	6547	Planting; brush cutting; hand weed Spiny Rice-flower areas
Aug 12 2014	6569	Planting; hand weeding Spiny Rice-flower areas
Aug 12 2014	6576	Hand weed Spiny Rice-flower area; direct seeded native herbs; watering Spiny Rice-flower
Aug 12 2014	6606	Planting herbs; watering Spiny Rice-flower; planting 50 small Spiny Rice-flower, 34 females 16 Males grown by Melton City Council from bought local provenance seed.
Aug 28 2014	6608	Planting and watering herbs in Spiny Rice-flower area
Sep 15 2014	6611	Fence repairs Mount Cottrell Recreation reserve

Date	Invoice no	Activity performed
Sep 15 2014	6627	Spot spraying Serrated Tussock and Chilean Needle Grass; planting herbs; watering Spiny Rice-flower
Oct 10 2014	6667	Herb planting
Oct 13 2014	6620	Planting and watering herbs; watering Spiny Rice-flower
Oct 13 2014	6625	Fencing; planting herbs; spot spray preparation in offset area
Oct 13 2014	6637	Spot spraying; watering Spiny Rice-flower; fencing; watering; spot spray weeds in outer zone
Oct 13 2014	6663	Herb planting
Oct 13 2014	6673	Planting and watering herbs and Spiny Rice-flower
Oct 13 2014	6686	Watering herbs and Spiny Rice-flower
Nov 14 2014	6748	Watering Spiny Rice-flower
Nov 14 2014	6779	Watering
Nov 14 2014	6800	Spot spray Serrated Tussock and Chilean Needle Grass
Nov 26 2014	6734	Hand weed; spot spray; plant herbs
Nov 27 2014	6726	Mow and catch and brush cut non-indigenous annual grasses
Nov 27 2014	6770	Spot Spray Serrated Tussock and Chilean Needle Grass; hand weeding herbs.
Nov 27 2014	6831	Mow and catch weedy areas; watering herb areas and Spiny Rice-flower zones
Jan 5 2015	6953	Hand weed Spiny Rice-flower and herb zones
Feb 24 2015	6905	Spot spray annual grasses and C4 grasses
Feb 24 2015	6953	Hand weed spot spray serrated tussock
Jan 5 2015	6953	Hand weed Spiny Rice-flower and herb zones
Apr 29 2015	7094	Spot spray broad leaf weeds; erect photo points; mow and catch
Apr 29 2015	7093	Hand weed Spiny Rice-flower zones; spot spray Serrated Tussock and broad leaf weeds
Apr 29 2015	7073	Hand weed Spiny Rice-flower; spot spray Serrated Tussock
Jun 11 2015	7175	Hand weed
Jun 12 2015	7193	Spot spray broad leaf weeds; spot burns and planting
Jun 22 2015	7231	Planting herbs; hand weed
Jun 22 2015	7218	Spiny Rice-flower planting and herb planting
Jun 22 2015	7224	Spiny Rice-flower direct seeding; setting up enclosures; spot spray
Jun 24 2015	30445	Plants
Jun 26 2015	7256	Planting herbs
Jun 26 2015	7244	Planting herbs
Jun 29 2015	30266	Plants
Jun 29 2015	30365	Plants
Jun 30 2015	7276	Planting and watering
Jun 30 2015	7273	Planting and watering

Date	Invoice no	Activity performed
Aug 10 2015	615920	Supply of plants
Aug 25 2015	7094	Supply and install rabbit proof fence
Aug 27 2015	616472	Watering
Sep 7 2015	616692	Watering herbs
Sep 7 2015	616684	Plants
Sep 11 2015	616831	Hand weed plantings; watering herbs; spot spray annual grasses
Sep 11 2015	616829	Hand weed plantings of herbs
Sep 11 2015	616830	Spot spray broad leaf weeds
Oct 1 2015	617279	Weed control and fence repairs
Oct 5 2015	617316	Watering herbs
Oct 5 2015	617315	Planting herbs prep spray
Oct 5 2015	617314	Spot spray broad leaf weeds
Oct 5 2015	617313	Planting herbs; spot spray annual grasses
Oct 5 2015	617312	Planting herbs; spot spray and hand weed broad leaf weeds
Oct 29 2015	617884	Watering herb planting; brush cut oats
Nov 13 2015	618201	Brush cut annual grasses; hand weed Spiny Rice-flower plots.
Dec 17 2015	619048	Spot spray Serrated Tussock and Chilean Needle Grass; hand weed; watering Spiny Rice-flower and herbs; setting up monitoring points
Jan 7 2016	7588	Spot spray broad leaf weeds
Apr 1 2016	620964	Brush cut; watering; planting
Apr 27 2016	621440	Direct seed herbs
May 10 2016	621739	Watering herbs and Spiny Rice-flower
May 27 2016	622241	Planting herbs
May 27 2016	622242	Spot spray; planting herbs, spot spray broad leaf weeds
Jun 10 2016	622574	
Jun 10 2016	622563	Spot spray; hand weed plantings
Jun 30 2016	623044	Hand weed broad leaf weeds
Jun 30 2016	7969	Spot spray; hand weed
Jul 1 2016	7969	Spot spray; hand weed
Sep 11 2015	616830	Spot spray broad leaf weeds
Sep 13 2016	8044	Spot spray; hand weed; planting
Sep 26 2016	8062	Planting herbs
Oct 11 2016	8080	Spot spray; hand weed broad leaf weeds; planting herbs; spot spray and brush cut annual grasses
Oct 11 2016	8083	Watering Spiny Rice-flower and herbs; hand weed
Oct 11 2016	8082	Spot spray; hand weed broad leaf weeds; planting herbs; spot spray; brush cut annual grasses
Oct 28 2016	8111	Mow and catch annual grasses

Date	Invoice no	Activity performed
Nov 13 2015	618201	Brush cut annual grasses; hand weed Spiny Rice-flower plots
Nov 14 2016	8156	Hand weed plantings; watering Spiny Rice-flowers; planting and watering Spiny Rice-flowers.
Nov 29 2016	8164	Spot spray Serrated Tussock and Chilean Needle Grass; hand weed herbs; watering
Dec 21 2016	8188	Spot spray broad leaf weeds; Serrated Tussock and Chilean Needle Grass; hand weed in herb areas
Jan 30 2017	8263	Spot spray C4 grasses hand weed broad leaf weeds
Feb 13 2017	8351	Spot spray C4 grasses hand weed broad leaf weeds
Mar 15 2017	8384	Translocation of Spiny Rice-flower from Greigs Rd
Apr 07 2017	8476	Burning of grassland within offset
May 17 2017	8509	Spot spray annual grasses and planting herbs
Jun 20 2017	8567	Spot burning annual grasses
Jun 28 2017	8582	Spot burning annual grasses and hand weed annual grasses
Jun 29 2017	8608	Spot burning annual grasses hand weed annual grasses
Sep 8 2017	8744	Herb planting
Sep 11 2017	8708	Herb planting
Sep 26 2017	8778	Herb planting
Sep 26 2017	8780	Herb planting spot spray annual grasses and irrigating
Sep 27 2017	8770	Herb planting
Oct 12 2017	8820	Brush cutting and planting
Oct 12 2017	8787	Herb planting, watering and spot spraying annual grasses
Oct 30 2017	8838	Herb planting mow and catch annual grasses
Oct 30 2017	8809	Herb planting mow and catch
Dec 12 2017	8940	Hand weed herb plantings
Jan 9 2018	8947	Hand weed and planting
Feb 6 2018	9113	Hand weed Spiny Rice-flower zones
Jun 14 2018	9249	Water Spiny Rice-flowers, hand weed, planting herbs
Jun 28 2018	9290	Preparing planting sites
May 7 2018	9196	Preparing planting sites
Aug 8 2018	9332	Planting Spiny Rice-flowers hand weeding
Oct 8 2018	9435	Planting herbs and watering
Nov 5 2018	9444	Spot spray general weeds, planting herbs watering Spiny Rice-flowers
Nov 13 2018	9449	Planting herbs hand weeding
Nov 13 2018	9464	Water Spiny Rice-flowers spot spray annual grasses
Nov 13 2018	9483	Water Spiny Rice-flowers planting herbs
Dec 18 2018	9515	Hand weed and watering
Dec 20 2018	9513	Watering and hand weeding
Dec 20 2018	9500	Biomass reduction mow and catch

Date	Invoice no	Activity performed
Mar 14 2019	9641	Hand weed herbs and Spiny Rice-flowers zones
Mar 26 2019	9673	Hand weed herb planting
May 8 2019	9730	Direct seed *Austrostipa spp,* herb planting preparation
May 23 2019	9768	Direct seeding Spiny Rice-flowers zone 1 to 6
Jun 27 2019	9852	Fox off programme
Jun 28 2019	9808	Burn and planting prep
Jun 28 2019	9809	Planting herbs
Sep 13 2019	9937	Spot spray annual grass and planting
Sep 13 2019	9954	Planting herbs, spot spray broad Leaf weeds
Sep 13 2019	9939	Planting herbs
Sep 13 2019	9938	Planting herbs
Oct 4 2019	9958	Planting, spot spray broad leaf weeds
Oct 4 2019	9988	Spot spray annual grass
Oct 30 2019	10028	Planting, spot spray annual grass
Oct 30 2019	10031	Planting, watering herbs
Oct 30 2019	10030	Planting herbs
Nov 14 2019	10033	Planting herbs
Nov 26 2019	10043	Brush cutting annual grass, hand weeding herbs
Dec 16 2019	10061	Mow and catch annual grass in herb areas
Mar 20 2020	10226	spot spray exotic grasses ,Planting herbs
May 18 2020	10315	spot spray handweed exotic grasses and broadleaf
April 4 2020	10316	direct seed Pimelae seed in new zone
Jun 9 2020	10337	spot spray exotic grass
Jun 16 2020	10377	spot spray exotic grass
June 16 2020	10411	Fox baiting
Jun 20 2020	10446	Spot Spray Annual grass and Broadleaf weed
Jun 30 2020	10449	Pimelea spinescens monitoring herb planting, spot sprayed broad leaf weeds annual grasses
Aug 26 2020	10500	mow and catch for biomass reduction SRF zones 1 to 3
Aug 28 2020	10524	burnt a section of offset area
Sep 8 2020	10536	Hand weed and spot burnt sections of offset
Oct 10 2020	10585	Planting herbs and planting
Oct 28 2020	10608	Mow and catch and handweed annual grass in pimelea zones

Date	Invoice no	Activity performed
Nov 4 2020	10225	Mow and catch and handweed annual grass in offset and near pimelea zones
Nov 17 2020	10061	Hand weed Annual grasses, Chipped out Chilean needle grass
Dec 3 2020	10656	Chipped out Chilean needle grass
Dec 5 2020	10677	Spot spray broad leaf weeds and C4 grasses in offset
Dec 9 2020	10677	Hand Weed & Spot Sray broad leaf weeds + c4 grass mow and catch weed heads
Dec 22 2020	10680	Hand weed, spot sray, mow and catch weed heads
Feb 3 2021	10729	Hand weed around SRF areas
Feb 16 2021	10771	Mow and catch weed heads , spot spray general weeds
Mar 1 2021	10789	Hand weed offset
Aug 10 2021	11016	Hand weed around orchids
Sep 28 2021	11056	Hand weed, spot spray broad leaf weeds ,annual grasses Oxalis
Sep 29 2021	11057	Spot Spray broad leaf weeds
Oct 1 2021	11080	Spot spray Serrated tussoke, chilean needle grass and oxalis
Nov 4 2021	11116	srf offset Chilean needle grass and Serrated tussock
Dec 3 2021	11164	Spot spray C4 grasses and Chilean needle grass and Cocksfoot
Dec 21 2021	11183	Spot spray weedy grass

APPENDIX C: SPINY RICE-FLOWER MONITORING DATA, 2020

zone(inner/ outer)	plant no	Year recruited /planted	Type	sex	Flowering 2020	percentage foliage 2020	condition catgory 2020	Tag	Burnt/unburnt 2020	2020 status	2019 status	2018 status	2017 status	2016 status	Pimelea Zone
inner	51	2014	Planted	M	Not applicable	Not applicable	Not applicable	PS 51 PLD	unburnt	D	D	D	D	D	1
inner	55	2014	Planted	F	Not applicable	Not applicable	Not applicable	PS 55 PLD	unburnt	D	D	D	D	D	1
inner	56	2014	Planted	M	Not applicable	Not applicable	Not applicable	PS 56 PLD	unburnt	D	D	D	possibly dormant	A	1
inner	57	2014	Planted	F	Not applicable	Not applicable	Not applicable	PS 57 PLD	unburnt	D	D	D	possibly dormant	A	1
inner	58	2014	Planted	M	Not applicable	Not applicable	Not applicable	PS 58 PLD	unburnt	D	D	D	D	D	1
inner	145	2015	Planted	Unknown	Not applicable	Not applicable	Not applicable	PS 145 PLD	unburnt	D	D	D	D	D	1
inner	146	2015	Planted	F	Not applicable	Not applicable	Not applicable	PS 146 PLD	unburnt	D	D	D	D	D	1
inner	147	2015	Planted	F	Not applicable	Not applicable	Not applicable	PS 147 PLD	unburnt	D	D	D	D	D	1
inner	148	2015	Planted	M	Not applicable	Not applicable	Not applicable	PS 148 PLD	unburnt	D	D	D	D	D	1
inner	149	2015	Planted	F	Not applicable	Not applicable	Not applicable	PS 149 PLD	unburnt	D	D	D	D	D	1
inner	150	2015	Planted	F	Not applicable	Not applicable	Not applicable	PS 150 PLD	unburnt	D	D	D	D	D	1
inner	151	2015	Planted	Unknown	Not applicable	Not applicable	Not applicable	PS 151 PLD	unburnt	D	D	D	D	D	1
inner	152	2015	Planted	F	Not applicable	Not applicable	Not applicable	PS 152 PLD	unburnt	D	D	D	D	D	1
inner	153	2015	Planted	F	Not applicable	Not applicable	Not applicable	PS 153 PLD	unburnt	D	D	D	D	D	1
inner	154	2015	Planted	F	Not applicable	Not applicable	Not applicable	PS 154 PLD	unburnt	D	D	D	D	D	1
inner	155	2015	Planted	F	Not applicable	Not applicable	Not applicable	PS 155 PLD	unburnt	D	D	D	D	D	1
inner	156	2015	Planted	F	Not applicable	Not applicable	Not applicable	PS 156 PLD	unburnt	D	D	D	D	D	1
inner	157	2015	Planted	M	Not applicable	Not applicable	Not applicable	PS 157 PLD	unburnt	D	D	D	D	D	1
inner	158	2015	Planted	F	Not applicable	Not applicable	Not applicable	PS 158 PLD	unburnt	D	D	D	D	D	1
inner	159	2015	Planted	F	Not applicable	Not applicable	Not applicable	PS 159 PLD	unburnt	D	D	D	D	D	1
inner	161	2015	Planted	F	Not applicable	Not applicable	Not applicable	PS 161 PLD	unburnt	D	D	D	D	D	1
inner	238	2017	Planted	Unknown	Not applicable	Not applicable	Not applicable	PS238 PLD	unburnt	D	D	D			1
inner	239	2017	Planted	Unknown	Not applicable	Not applicable	Not applicable	PS239 PLD	unburnt	D	D	D			1

inner	44	2014	Planted	M	Not applicable	Not applicable	Not applicable	PS 44 PLD	unburnt	D	D	D	D	D	2
inner	46	2014	Planted	F	Not applicable	Not applicable	Not applicable	PS 46 PLD	unburnt	D	D	D	possibly dormant	A	2
inner	47	2014	Planted	F	Not applicable	Not applicable	Not applicable	PS 47 PLD	unburnt	D	D	D	D	D	2
inner	48	2014	Planted	F	Not applicable	Not applicable	Not applicable	PS 48 PLD	unburnt	D	D	D	D	D	2
inner	49	2014	Planted	F	Not applicable	Not applicable	Not applicable	PS 49 PLD	unburnt	D	D	D	D	D	2
inner	50	2014	Planted	M	Not applicable	Not applicable	Not applicable	PS 50 PLD	unburnt	D	D	D	D	D	2
inner	128	2015	Planted	M	Not applicable	Not applicable	Not applicable	PS 128 PLD	unburnt	D	D	D	D	D	2
inner	129	2015	Planted	Unknown	Not applicable	Not applicable	Not applicable	PS 129 PLD	unburnt	D	D	D	D	D	2
inner	130	2015	Planted	F	Not applicable	Not applicable	Not applicable	PS 130 PLD	unburnt	D	D	D	D	D	2
inner	131	2015	Planted	F	Not applicable	Not applicable	Not applicable	PS 131 PLD	unburnt	D	D	D	D	D	2
inner	132	2015	Planted	M	Not applicable	Not applicable	Not applicable	PS 132 PLD	unburnt	D	D	D	D	D	2
inner	133	2015	Planted	F	Not applicable	Not applicable	Not applicable	PS 133 PLD	unburnt	D	D	D	D	D	2
inner	134	2015	Planted	Unknown	Not applicable	Not applicable	Not applicable	PS 134 PLD	unburnt	D	D	D	D	D	2
inner	135	2015	Planted	F	Not applicable	Not applicable	Not applicable	PS 135 PLD	unburnt	D	D	D	D	D	2
inner	136	2015	Planted	F	Not applicable	Not applicable	Not applicable	PS 136 PLD	unburnt	D	D	D	D	D	2
inner	137	2015	Planted	F	Not applicable	Not applicable	Not applicable	PS 137 PLD	unburnt	D	D	D	D	D	2
inner	138	2015	Planted	M	Not applicable	Not applicable	Not applicable	PS 138 PLD	unburnt	D	D	D	D	D	2
inner	139	2015	Planted	F	Not applicable	Not applicable	Not applicable	PS 139 PLD	unburnt	D	D	D	D	D	2
inner	140	2015	Planted	F	Not applicable	Not applicable	Not applicable	PS 140 PLD	unburnt	D	D	D	D	D	2
inner	141	2015	Planted	F	Not applicable	Not applicable	Not applicable	PS 141 PLD	unburnt	D	D	D	D	D	2
inner	142	2015	Planted	Unknown	Not applicable	Not applicable	Not applicable	PS 142 PLD	unburnt	D	D	D	D	D	2
inner	144	2015	Planted	F	Not applicable	Not applicable	Not applicable	PS 144 PLD	unburnt	D	D	D	A	A	2
inner	245	2017	Planted	Unknown	Not applicable	Not applicable	Not applicable	PS 245 PLD	unburnt	D	D	D			2
inner	247	2017	Planted	Unknown	Not applicable	Not applicable	Not applicable	PS 247 PLD	unburnt	D	D	D			2
inner	251	2017	Planted	Unknown	Not applicable	Not applicable	Not applicable	PS 251 PLD	unburnt	D	D	D			2
inner	7	?	Planted	Unknown	Not applicable	Not applicable	Not applicable	NA	unburnt	D	D	D	D	D	
inner	8	2013	Planted	Unknown	Not applicable	Not applicable	Not applicable	NA	unburnt	D	D	D	A	A	
inner	35	2014	Planted	M	Not applicable	Not applicable	Not applicable	PS 35 PLD	unburnt	D	D	D	D	D	3

inner	36	2014	Planted	F	Not applicable	Not applicable	Not applicable	PS 36 PLD	unburnt	D	D	D	D	D	3
inner	38	2014	Planted	F	Not applicable	Not applicable	Not applicable	PS 38 PLD	unburnt	D	D	D	D	D	3
inner	39	2014	Planted	F	Not applicable	Not applicable	Not applicable	PS 39 PLD	unburnt	D	D	D	D	D	3
inner	40	2014	Planted	F	Not applicable	Not applicable	Not applicable	PS 40 PLD	unburnt	D	D	D	D	D	3
inner	41	2014	Planted	F	Not applicable	Not applicable	Not applicable	PS 41 PLD	unburnt	D	D	D	D	D	3
inner	42	2014	Planted	F	Not applicable	Not applicable	Not applicable	PS 42 PLD	unburnt	D	D	D	D	D	3
inner	43	2014	Planted	M	Not applicable	Not applicable	Not applicable	PS 43 PLD	unburnt	D	D	D	D	D	3
inner	111	2015	Planted	Unknown	Not applicable	Not applicable	Not applicable	PS 111 PLD	unburnt	D	D	D	D	D	3
inner	112	2015	Planted	F	Not applicable	Not applicable	Not applicable	PS 112 PLD	unburnt	D	D	D	D	D	3
inner	113	2015	Planted	F	Not applicable	Not applicable	Not applicable	PS 113 PLD	unburnt	D	D	D	D	D	3
inner	114	2015	Planted	Unknown	Not applicable	Not applicable	Not applicable	PS 114 PLD	unburnt	D	D	D	D	D	3
inner	115	2015	Planted	F	Not applicable	Not applicable	Not applicable	PS 115 PLD	unburnt	D	D	D	D	D	3
inner	116	2015	Planted	F	Not applicable	Not applicable	Not applicable	PS 116 PLD	unburnt	D	D	D	D	D	3
inner	117	2015	Planted	M	Not applicable	Not applicable	Not applicable	PS 117 PLD	unburnt	D	D	D	D	D	3
inner	118	2015	Planted	F	Not applicable	Not applicable	Not applicable	PS 118 PLD	unburnt	D	D	D	D	D	3
inner	119	2015	Planted	F	Not applicable	Not applicable	Not applicable	PS 119 PLD	unburnt	D	D	D	D	D	3
inner	120	2015	Planted	F	Not applicable	Not applicable	Not applicable	PS 120 PLD	unburnt	D	D	D	D	D	3
inner	121	2015	Planted	M	Not applicable	Not applicable	Not applicable	PS 121 PLD	unburnt	D	D	D	D	D	3
inner	122	2015	Planted	F	Not applicable	Not applicable	Not applicable	PS 122 PLD	unburnt	D	D	D	D	D	3
inner	123	2015	Planted	Unknown	Not applicable	Not applicable	Not applicable	PS 123 PLD	unburnt	D	D	D	D	D	3
inner	124	2015	Planted	F	Not applicable	Not applicable	Not applicable	PS 124 PLD	unburnt	D	D	D	D	D	3
inner	125	2015	Planted	F	Not applicable	Not applicable	Not applicable	PS 125 PLD	unburnt	D	D	D	D	D	3
inner	126	2015	Planted	M	Not applicable	Not applicable	Not applicable	PS 126 PLD	unburnt	D	D	D	D	D	3
inner	127	2015	Planted	F	Not applicable	Not applicable	Not applicable	PS 127 PLD	unburnt	D	D	D	D	D	3
inner	258	2017	Planted	Unknown	Not applicable	Not applicable	Not applicable	PS 258 PLD	unburnt	D	D	D			3
inner	260	2017	Planted	Unknown	Not applicable	Not applicable	Not applicable	PS 260 PLD	unburnt	D	D	D			3
inner	262	2017	Planted	Unknown	Not applicable	Not applicable	Not applicable	PS 262 PLD	unburnt	D	D	D			3
inner	263	2017	Planted	Unknown	Not applicable	Not applicable	Not applicable	PS 263 PLD	unburnt	D	D	D			3

inner	266	2017	Planted	Unknown	Not applicable	Not applicable	Not applicable	PS 266 PLD	unburnt	D	D	D			3
inner	271	2017	Planted	Unknown	Not applicable	Not applicable	Not applicable	PS 271 PLD	unburnt	D	D	D			3
inner	26	2014	Planted	F	Not applicable	Not applicable	Not applicable	PS 26 PLD	unburnt	D	D	D	D	D	4
inner	27	2014	Planted	M	Not applicable	Not applicable	Not applicable	PS 27 PLD	unburnt	D	D	D	D	D	4
inner	28	2014	Planted	F	Not applicable	Not applicable	Not applicable	PS 28 PLD	unburnt	D	D	D	D	D	4
inner	29	2014	Planted	F	Not applicable	Not applicable	Not applicable	PS 29 PLD	unburnt	D	D	D	D	D	4
inner	30	2014	Planted	F	Not applicable	Not applicable	Not applicable	PS 30 PLD	unburnt	D	D	D	D	D	4
inner	31	2014	Planted	F	Not applicable	Not applicable	Not applicable	PS 31 PLD	unburnt	D	D	D	A	A	4
inner	32	2014	Planted	M	Not applicable	Not applicable	Not applicable	PS 32 PLD	unburnt	D	D	D	D	D	4
inner	94	2015	Planted	F	Not applicable	Not applicable	Not applicable	PS 94 PLD	unburnt	D	D	D	D	D	4
inner	95	2015	Planted	F	Not applicable	Not applicable	Not applicable	PS 95 PLD	unburnt	D	D	D	D	D	4
inner	96	2015	Planted	F	Not applicable	Not applicable	Not applicable	PS 96 PLD	unburnt	D	D	D	D	D	4
inner	97	2015	Planted	Unknown	Not applicable	Not applicable	Not applicable	PS 97 PLD	unburnt	D	D	D	D	D	4
inner	98	2015	Planted	M	Not applicable	Not applicable	Not applicable	PS 98 PLD	unburnt	D	D	D	D	D	4
inner	99	2015	Planted	F	Not applicable	Not applicable	Not applicable	PS 99 PLD	unburnt	D	D	D	D	D	4
inner	100	2015	Planted	M	Not applicable	Not applicable	Not applicable	PS 100 PLD	unburnt	D	D	D	D	D	4
inner	101	2015	Planted	F	Not applicable	Not applicable	Not applicable	PS 101 PLD	unburnt	D	D	D	D	D	4
inner	102	2015	Planted	F	Not applicable	Not applicable	Not applicable	PS 102 PLD	unburnt	D	D	D	D	D	4
inner	103	2015	Planted	Unknown	Not applicable	Not applicable	Not applicable	PS 103 PLD	unburnt	D	D	D	D	D	4
inner	104	2015	Planted	M	Not applicable	Not applicable	Not applicable	PS 104 PLD	unburnt	D	D	D	A	A	4
inner	105	2015	Planted	F	Not applicable	Not applicable	Not applicable	PS 105 PLD	unburnt	D	D	D	D	D	4
inner	106	2015	Planted	F	Not applicable	Not applicable	Not applicable	PS 106 PLD	unburnt	D	D	D	D	D	4
inner	107	2015	Planted	F	Not applicable	Not applicable	Not applicable	PS 107 PLD	unburnt	D	D	D	D	D	4
inner	108	2015	Planted	Unknown	Not applicable	Not applicable	Not applicable	PS 108 PLD	unburnt	D	D	D	D	D	4
inner	109	2015	Planted	F	Not applicable	Not applicable	Not applicable	PS 109 PLD	unburnt	D	D	D	D	D	4
inner	110	2015	Planted	F	Not applicable	Not applicable	Not applicable	PS 110 PLD	unburnt	D	D	D	D	D	4
inner	272	2017	Planted	Unknown	Not applicable	Not applicable	Not applicable	PS 272 PLD	unburnt	D	D	D			4
inner	273	2017	Planted	Unknown	Not applicable	Not applicable	Not applicable	PS 273 PLD	unburnt	D	D	D			4

inner	275	2017	Planted	Unknown	Not applicable	Not applicable	Not applicable	PS 275 PLD	unburnt	D	D	D			4
inner	276	2017	Planted	Unknown	Not applicable	Not applicable	Not applicable	PS 276 PLD	unburnt	D	D	D			4
inner	277	2017	Planted	Unknown	Not applicable	Not applicable	Not applicable	PS 277 PLD	unburnt	D	D	D			4
inner	279	2017	Planted	Unknown	Not applicable	Not applicable	Not applicable	PS 279 PLD	unburnt	D	D	D			4
inner	281	2017	Planted	Unknown	Not applicable	Not applicable	Not applicable	PS 281 PLD	unburnt	D	D	D			4
inner	282	2017	Planted	Unknown	Not applicable	Not applicable	Not applicable	PS 282 PLD	unburnt	D	D	D			4
inner	283	2017	Planted	Unknown	Not applicable	Not applicable	Not applicable	PS 283 PLD	unburnt	D	D	D			4
inner	285	2017	Planted	Unknown	Not applicable	Not applicable	Not applicable	PS 285 PLD	unburnt	D	D	D			4
inner	335	2018	Planted	Unknown	Not applicable	Not applicable	Not applicable	PS 335 PLD	unburnt	D	D	D			4
inner	17	2014	Planted	F	Not applicable	Not applicable	Not applicable	PS 17 PLD	unburnt	D	D	D	D	D	5
inner	18	2014	Planted	F	Not applicable	Not applicable	Not applicable	PS 18 PLD	unburnt	D	D	D	D	D	5
inner	19	2014	Planted	F	Not applicable	Not applicable	Not applicable	PS 19 PLD	unburnt	D	D	D	D	D	5
inner	20	2014	Planted	F	Not applicable	Not applicable	Not applicable	PS 20 PLD	unburnt	D	D	D	D	D	5
inner	21	2014	Planted	F	Not applicable	Not applicable	Not applicable	PS 21 PLD	unburnt	D	D	D	possibly dormant	A	5
inner	22	2014	Planted	M	Not applicable	Not applicable	Not applicable	PS 22 PLD	unburnt	D	D	D	D	D	5
inner	25	2014	Planted	M	Not applicable	Not applicable	Not applicable	PS 25 PLD	unburnt	D	D	D	possibly dormant	A	5
inner	77	2015	Planted	M	Not applicable	Not applicable	Not applicable	PS 77 PLD	unburnt	D	D	D	D	D	5
inner	78	2015	Planted	F	Not applicable	Not applicable	Not applicable	PS 78 PLD	unburnt	D	D	D	D	D	5
inner	79	2015	Planted	Unknown	Not applicable	Not applicable	Not applicable	PS 79 PLD	unburnt	D	D	D	D	D	5
inner	80	2015	Planted	F	Not applicable	Not applicable	Not applicable	PS 80 PLD	unburnt	D	D	D	D	D	5
inner	81	2015	Planted	Unknown	Not applicable	Not applicable	Not applicable	PS 81 PLD	unburnt	D	D	D	D	D	5
inner	82	2015	Planted	F	Not applicable	Not applicable	Not applicable	PS 82 PLD	unburnt	D	D	D	possibly dormant	A	5
inner	83	2015	Planted	F	Not applicable	Not applicable	Not applicable	PS 83 PLD	unburnt	D	D	D	D	D	5
inner	84	2015	Planted	F	Not applicable	Not applicable	Not applicable	PS 84 PLD	unburnt	D	D	D	D	D	5
inner	85	2015	Planted	F	Not applicable	Not applicable	Not applicable	PS 85 PLD	unburnt	D	D	D	D	D	5
inner	86	2015	Planted	F	Not applicable	Not applicable	Not applicable	PS 86 PLD	unburnt	D	D	D	D	D	5
inner	87	2015	Planted	M	Not applicable	Not applicable	Not applicable	PS 87 PLD	unburnt	D	D	D	D	D	5
inner	88	2015	Planted	F	Not applicable	Not applicable	Not applicable	PS 88 PLD	unburnt	D	D	D	D	D	5

inner	89	2015	Planted	Unknown	Not applicable	Not applicable	Not applicable	PS 89 PLD	unburnt	D	D	D	D	D	5
inner	90	2015	Planted	F	Not applicable	Not applicable	Not applicable	PS 90 PLD	unburnt	D	D	D	D	D	5
inner	91	2015	Planted	M	Not applicable	Not applicable	Not applicable	PS 91 PLD	unburnt	D	D	D	D	D	5
inner	92	2015	Planted	F	Not applicable	Not applicable	Not applicable	PS 92 PLD	unburnt	D	D	D	D	D	5
inner	93	2015	Planted	F	Not applicable	Not applicable	Not applicable	PS 93 PLD	unburnt	D	D	D	D	D	5
inner	287	2017	Planted	Unknown	Not applicable	Not applicable	Not applicable	PS 287 PLD	unburnt	D	D	D			5
inner	288	2017	Planted	Unknown	Not applicable	Not applicable	Not applicable	PS 288 PLD	unburnt	D	D	D			5
inner	289	2017	Planted	Unknown	Not applicable	Not applicable	Not applicable	PS 289 PLD	unburnt	D	D	D			5
inner	290	2017	Planted	Unknown	Not applicable	Not applicable	Not applicable	PS 290 PLD	unburnt	D	D	D			5
inner	291	2017	Planted	Unknown	Not applicable	Not applicable	Not applicable	PS 291 PLD	unburnt	D	D	D			5
inner	292	2017	Planted	Unknown	Not applicable	Not applicable	Not applicable	PS 292 PLD	unburnt	D	D	D			5
inner	293	2017	Planted	Unknown	Not applicable	Not applicable	Not applicable	PS 293 PLD	unburnt	D	D	D			5
inner	294	2017	Planted	Unknown	Not applicable	Not applicable	Not applicable	PS 294 PLD	unburnt	D	D	D			5
inner	296	2017	Planted	Unknown	Not applicable	Not applicable	Not applicable	PS 296 PLD	unburnt	D	D	D			5
inner	297	2017	Planted	Unknown	Not applicable	Not applicable	Not applicable	PS 297 PLD	unburnt	D	D	D			5
inner	298	2017	Planted	Unknown	Not applicable	Not applicable	Not applicable	PS 298 PLD	unburnt	D	D	D			5
inner	299	2017	Planted	Unknown	Not applicable	Not applicable	Not applicable	PS 299 PLD	unburnt	D	D	D			5
inner	300	2017	Planted	Unknown	Not applicable	Not applicable	Not applicable	PS 300 PLD	unburnt	D	D	D			5
inner	356	2018	Planted	Unknown	Not applicable	Not applicable	Not applicable	PS 356 PLD	unburnt	D	D	D			5
inner	9	2014	Planted	F	Not applicable	Not applicable	Not applicable	PS 9 PLD	unburnt	D	D	D	D	D	6
inner	12	2014	Planted	F	Not applicable	Not applicable	Not applicable	PS 12 PLD	unburnt	D	D	D	D	D	6
inner	13	2014	Planted	M	Not applicable	Not applicable	Not applicable	PS 13 PLD	unburnt	D	D	D	possibly dormant	A	6
inner	14	2014	Planted	F	Not applicable	Not applicable	Not applicable	PS 14 PLD	unburnt	D	D	D	possibly dormant	A	6
inner	59	2015	Planted	Unknown	Not applicable	Not applicable	Not applicable	PS 59 PLD	unburnt	D	D	D	D	D	6
inner	60	2015	Planted	F	Not applicable	Not applicable	Not applicable	PS 60 PLD	unburnt	D	D	D	D	D	6
inner	61	2015	Planted	F	Not applicable	Not applicable	Not applicable	PS 61 PLD	unburnt	D	D	D	D	D	6
inner	62	2015	Planted	Unknown	Not applicable	Not applicable	Not applicable	PS 62 PLD	unburnt	D	D	D	D	D	6
inner	63	2015	Planted	F	Not applicable	Not applicable	Not applicable	PS 63 PLD	unburnt	D	D	D	D	D	6

inner	64	2015	Planted	M	Not applicable	Not applicable	Not applicable	PS 64 PLD	unburnt	D	D	D	D	D	6
inner	65	2015	Planted	F	Not applicable	Not applicable	Not applicable	PS 65 PLD	unburnt	D	D	D	D	D	6
inner	66	2015	Planted	F	Not applicable	Not applicable	Not applicable	PS 66 PLD	unburnt	D	D	D	D	D	6
inner	67	2015	Planted	Unknown	Not applicable	Not applicable	Not applicable	PS 67 PLD	unburnt	D	D	D	D	D	6
inner	68	2015	Planted	F	Not applicable	Not applicable	Not applicable	PS 68 PLD	unburnt	D	D	D	D	D	6
inner	69	2015	Planted	F	Not applicable	Not applicable	Not applicable	PS 69 PLD	unburnt	D	D	D	D	D	6
inner	70	2015	Planted	M	Not applicable	Not applicable	Not applicable	PS 70 PLD	unburnt	D	D	D	D	D	6
inner	71	2015	Planted	F	Not applicable	Not applicable	Not applicable	PS 71 PLD	unburnt	D	D	D	D	D	6
inner	72	2015	Planted	M	Not applicable	Not applicable	Not applicable	PS 72 PLD	unburnt	D	D	D	D	D	6
inner	73	2015	Planted	F	Not applicable	Not applicable	Not applicable	PS 73 PLD	unburnt	D	D	D	D	D	6
inner	74	2015	Planted	F	Not applicable	Not applicable	Not applicable	PS 74 PLD	unburnt	D	D	D	D	D	6
inner	75	2015	Planted	F	Not applicable	Not applicable	Not applicable	PS 75 PLD	unburnt	D	D	D	D	D	6
inner	162	2016	Planted	Unknown	Not applicable	Not applicable	Not applicable	PS162 PLD	unburnt	D	D	D	possibly dormant	A	6
inner	163	2016	Planted	Unknown	Not applicable	Not applicable	Not applicable	PS163 PLD	unburnt	D	D	D	possibly dormant	A	6
inner	164	2016	Planted	Unknown	Not applicable	Not applicable	Not applicable	PS164 PLD	unburnt	D	D	D	possibly dormant	A	6
inner	165	2016	Planted	Unknown	Not applicable	Not applicable	Not applicable	PS165 PLD	unburnt	D	D	D	possibly dormant	A	6
inner	166	2016	Planted	Unknown	Not applicable	Not applicable	Not applicable	PS166 PLD	unburnt	D	D	D	possibly dormant	A	6
inner	168	2016	Planted	Unknown	Not applicable	Not applicable	Not applicable	PS168 PLD	unburnt	D	D	D	possibly dormant	A	6
inner	301	2017	Planted	Unknown	Not applicable	Not applicable	Not applicable	PS 301 PLD	unburnt	D	D	D			6
inner	302	2017	Planted	Unknown	Not applicable	Not applicable	Not applicable	PS 302 PLD	unburnt	D	D	D			6
inner	303	2017	Planted	Unknown	Not applicable	Not applicable	Not applicable	PS 303 PLD	unburnt	D	D	D			6
inner	305	2017	Planted	Unknown	Not applicable	Not applicable	Not applicable	PS 305 PLD	unburnt	D	D	D			6
inner	307	2017	Planted	Unknown	Not applicable	Not applicable	Not applicable	PS 307 PLD	unburnt	D	D	D			6
inner	308	2017	Planted	Unknown	Not applicable	Not applicable	Not applicable	PS 308 PLD	unburnt	D	D	D			6
inner	310	2017	Planted	Unknown	Not applicable	Not applicable	Not applicable	PS 310 PLD	unburnt	D	D	D			6
inner	315	2017	Planted	Unknown	Not applicable	Not applicable	Not applicable	PS 315 REC	unburnt	D	D	D			6
inner	366	2018	Planted	Unknown	Not applicable	Not applicable	Not applicable	PS 366 PLD	unburnt	D	D	D			6
outer	171	2017	Translocated	Unknown	Not applicable	Not applicable	Not applicable	PS 171 REL	unburnt	D	D	D	possibly dormant		7

outer	172	2017	Translocated	Unknown	Not applicable	Not applicable	Not applicable	PS 172 REL	unburnt	D	D	D	possibly dormant		7
outer	173	2017	Translocated	Unknown	Not applicable	Not applicable	Not applicable	PS 173 REL	unburnt	D	D	D	possibly dormant		7
outer	174	2017	Translocated	Unknown	Not applicable	Not applicable	Not applicable	PS 174 REL	unburnt	D	D	D	possibly dormant		7
outer	175	2017	Translocated	Unknown	Not applicable	Not applicable	Not applicable	PS 175 REL	unburnt	D	D	D	A		7
outer	177	2017	Translocated	Unknown	Not applicable	Not applicable	Not applicable	PS 177 REL	unburnt	D	D	D	possibly dormant		7
outer	178	2017	Translocated	Unknown	Not applicable	Not applicable	Not applicable	PS 178 REL	unburnt	D	D	D	possibly dormant		7
outer	180	2017	Translocated	Unknown	Not applicable	Not applicable	Not applicable	PS 180 REL	unburnt	D	D	D	possibly dormant		7
outer	182	2017	Translocated	Unknown	Not applicable	Not applicable	Not applicable	PS 182 REL	unburnt	D	D	D	possibly dormant		7
outer	183	2017	Translocated	Unknown	Not applicable	Not applicable	Not applicable	PS 183 REL	unburnt	D	D	D	possibly dormant		7
outer	184	2017	Translocated	Unknown	Not applicable	Not applicable	Not applicable	PS 184 REL	unburnt	D	D	D	possibly dormant		7
outer	186	2017	Translocated	Unknown	Not applicable	Not applicable	Not applicable	PS 186 REL	unburnt	D	D	D	possibly dormant		7
outer	187	2017	Translocated	Unknown	Not applicable	Not applicable	Not applicable	PS 187 REL	unburnt	D	D	D	possibly dormant		7
outer	188	2017	Translocated	Unknown	Not applicable	Not applicable	Not applicable	PS 188 REL	unburnt	D	D	D	possibly dormant		7
outer	191	2017	Translocated	Unknown	Not applicable	Not applicable	Not applicable	PS 191 REL	unburnt	D	D	D	possibly dormant		7
outer	192	2017	Translocated	Unknown	Not applicable	Not applicable	Not applicable	PS 192 REL	unburnt	D	D	D	A		7
outer	193	2017	Translocated	Unknown	Not applicable	Not applicable	Not applicable	PS 193 REL	unburnt	D	D	D	possibly dormant		7
outer	194	2017	Translocated	Unknown	Not applicable	Not applicable	Not applicable	PS 194 REL	unburnt	D	D	D	possibly dormant		7
outer	195	2017	Translocated	Unknown	Not applicable	Not applicable	Not applicable	PS 195 REL	unburnt	D	D	D	possibly dormant		7
outer	198	2017	Translocated	Unknown	Not applicable	Not applicable	Not applicable	PS 198 REL	unburnt	D	D	D	possibly dormant		7
outer	199	2017	Translocated	Unknown	Not applicable	Not applicable	Not applicable	PS 199 REL	unburnt	D	D	D	possibly dormant		7
outer	201	2017	Translocated	Unknown	Not applicable	Not applicable	Not applicable	PS 201 REL	unburnt	D	D	D	possibly dormant		7
outer	202	2017	Translocated	Unknown	Not applicable	Not applicable	Not applicable	PS 202 REL	unburnt	D	D	D	possibly dormant		7
outer	203	2017	Translocated	Unknown	Not applicable	Not applicable	Not applicable	PS 203 REL	unburnt	D	D	D	possibly dormant		7
outer	205	2017	Translocated	Unknown	Not applicable	Not applicable	Not applicable	PS 205 REL	unburnt	D	D	D	possibly dormant		7
outer	206	2017	Translocated	Unknown	Not applicable	Not applicable	Not applicable	PS 206 REL	unburnt	D	D	D	A		7
outer	207	2017	Translocated	Unknown	Not applicable	Not applicable	Not applicable	PS 207 REL	unburnt	D	D	D	possibly dormant		7
outer	208	2017	Translocated	Unknown	Not applicable	Not applicable	Not applicable	PS 208 REL	unburnt	D	D	D	A		7
outer	210	2017	Translocated	Unknown	Not applicable	Not applicable	Not applicable	PS 210 REL	unburnt	D	D	D	possibly dormant		7

outer	213	2017	Translocated	Unknown	Not applicable	Not applicable	Not applicable	PS 213 REL	unburnt	D	D	D	possibly dormant		7
outer	214	2017	Translocated	Unknown	Not applicable	Not applicable	Not applicable	PS 214 REL	unburnt	D	D	D	possibly dormant		7
outer	216	2017	Translocated	Unknown	Not applicable	Not applicable	Not applicable	PS 216 REL	unburnt	D	D	D	possibly dormant		7
outer	217	2017	Translocated	F	Not applicable	Not applicable	Not applicable	PS 217 REL	unburnt	D	D	D	possibly dormant		7
outer	219	2017	Translocated	Unknown	Not applicable	Not applicable	Not applicable	PS 219 REL	unburnt	D	D	D	possibly dormant		7
outer	220	2017	Translocated	Unknown	Not applicable	Not applicable	Not applicable	PS 220 REL	unburnt	D	D	D	possibly dormant		7
outer	221	2017	Translocated	Unknown	Not applicable	Not applicable	Not applicable	PS 221 REL	unburnt	D	D	D	A		7
outer	222	2017	Translocated	Unknown	Not applicable	Not applicable	Not applicable	PS 222 REL	unburnt	D	D	D	possibly dormant		7
outer	223	2017	Translocated	Unknown	Not applicable	Not applicable	Not applicable	PS 223 REL	unburnt	D	D	D	possibly dormant		7
outer	224	2017	Translocated	Unknown	Not applicable	Not applicable	Not applicable	PS 224 REL	unburnt	D	D	D	possibly dormant		7
outer	226	2017	Translocated	Unknown	Not applicable	Not applicable	Not applicable	PS 226 REL	unburnt	D	D	D	possibly dormant		7
outer	227	2017	Translocated	Unknown	Not applicable	Not applicable	Not applicable	PS 227 REL	unburnt	D	D	D	possibly dormant		7
outer	316	2017	Planted	Unknown	Not applicable	Not applicable	Not applicable	PS 316 PLD	unburnt	D	D	D			7
outer	320	2017	Planted	Unknown	Not applicable	Not applicable	Not applicable	PS 320 PLD	unburnt	D	D	D			7
outer	322	2017	Planted	Unknown	Not applicable	Not applicable	Not applicable	PS 322 PLD	unburnt	D	D	D			7
outer	323	2017	Planted	Unknown	Not applicable	Not applicable	Not applicable	PS 323 PLD	unburnt	D	D	D			7
outer	324	2017	Planted	Unknown	Not applicable	Not applicable	Not applicable	PS 324 PLD	unburnt	D	D	D			7
outer	325	2017	Planted	Unknown	Not applicable	Not applicable	Not applicable	PS 325 PLD	unburnt	D	D	D			7
outer	326	2017	Planted	Unknown	Not applicable	Not applicable	Not applicable	PS 326 PLD	unburnt	D	D	D			7
outer	328	2017	Planted	Unknown	Not applicable	Not applicable	Not applicable	PS 328 PLD	unburnt	D	D	D			7