



Clearing Permit

Drakesbrook Cemetery

Lot 389 Mitchell Avenue, Waroona

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1. Background

Lot 389 Mitchell Avenue, Waroona is a reserve under management order for the purpose of a cemetery, known as the Drakesbrook Cemetery. Currently the site is reaching capacity especially within the Catholic section. An expansion plan was developed which would accommodate an additional 804 new sites, facilities, and carpark. The site is heavily vegetated with native flora, therefore the Shire raised the need for a full flora and fauna survey.

In financial year 2022/23 the Shire set aside funds to outsource a flora and fauna survey. The results of this survey provide a better insight into the native vegetation onsite as well as the impact of noxious weeds. Following the report the Shire opted to not proceed with the development plan and instead decided to look at alternative options which would still achieve the best possible outcome for the Waroona community and Shire. These options consisted of the following;

1. Investigate and look at alternative sites for a new cemetery.
2. Investigate and look at acquiring land that adjoins to the current site to expand.
3. Investigate the option of reducing the clearing impact to expand onsite.

All options have been investigated and given the limited funds and suitable land options the Shire decided to proceed with expanding onsite and reduce the clearing impact by removing of vegetation (ground cover/ shrubs) within the established trees within areas mapped as completely degraded and degraded under Figure 15 of the Detailed and Targeted Flora and Vegetation Survey (Section 10 plus a full version of the report has been included as an associated attachment). This will allow the Shire to design plots within the tree coverage and create a picturesque vision to the cemetery which embraces the native vegetation and flora which is unique to this site.

This option also aligns with the focus areas and aspirations outlined in the Shire's Corporate Business Plan 2023-2027 (image 1). In addition, under the focus area "Our Built Assets" and objective 4.1 Public spaces and infrastructure that are accessible and appropriate for our community, to meet the purpose and needs of multiple users, there is a project for the revisiting of the Drakesbrook Cemetery Masterplan and development of a long-term cemetery plan (image 2).

The Shire also had the opportunity to apply for funding under the State NRM Community Steward Funds. A project was developed which not only allowed for the expansion, but all allowed the Shire to include weed mitigation, feral pest control, flora and fauna enhancement. Under section 2 of this document the funding objectives have been outlined. In addition to this the Shire has requested funds in the 2024/25 budget for some of the works to proceed if funding isn't successful.

The Shire is committed to protecting the native flora and fauna onsite and hope that the option to clear the ground cover and shrubs will be a positive step forward in expanding the cemetery whilst enhancing the site for future generations.

Focus Areas & Aspirations to 2030



Image 1: Focus Area & Aspirations to 2030 from the Shire’s Corporate Business Plan 2023-2027.

Our Built Assets

To build and effectively manage our assets to continually improve our standard of living.

Objective 4.1 Public spaces and infrastructure that are accessible and appropriate for our community, and meet the purpose and needs of multiple users

Strategy 4.1.1 Plan community facilities for current and future generations

Projects and Actions		Lead	2023/24	2024/25	2025/26	2026/27
4.1.1.1	Develop and implement the concept and design plans for the Waroona Community Precinct Phase 1	Office of the CEO	● Implement			
4.1.1.2	Develop and implement the concept and design plans for Waroona Community Precinct Phase 2 – Irrigation House building and adjacent shed.	Office of the CEO	● Plan	● Implement	● Implement	● Implement
4.1.1.3	Revisit the Drakesbrook Cemetery Masterplan and develop a long-term cemetery plan	Asset Management Services	● Implement			

Image 2: Our Built Assets section 4.1.1.3 outlines the Drakesbrook Cemetery Master Plan

2. State NRM Funding Objectives

The Shires application of the State NRM Community Stewardship Funding has been lodged and the Shire is currently awaiting the outcome. The below objects for the funding are outlined below. These are aimed at protecting the flora and fauna onsite whilst enhancing the site.

- Objective: Mitigation of weeds namely *Watsonia Meriana*.
Details: Complete initial mitigation works of weeds within the site by contractors. Pending outcome of initial mitigation, a follow up may be applicable. Works will also include some removal of ground cover debris consistent of leaves and sticks (see image 6). The removal of the debris will allow for the revegetation of native vegetation within the degraded areas.
Outcome: It is expected the initial weed mitigation works will reduce the current spread rate of the weeds and provide the Shire the ability to maintain the management of the weeds in future years. The removal of debris within these areas will reduce the fuel load and fire risk which is currently high. This will also allow for the revegetation of native vegetation within zones which are considered degraded.
- Objective: Feral Pest Control (Rabbits)
Details: Conduct monitoring of feral pest (rabbits) within the site, after the monitoring period has been completed traps will be set to trap rabbits for them to be directly injected with the RHDV-K5 virus, which will lower the risk of secondary poisoning of native animals. In addition to the onsite mitigation the Peel Harvey Biosecurity Group have provided a letter of support offering in-kind contribution to run a workshop on feral animal management, providing equipment and training and administrative support.
Outcome: Reporting will be provided after the mitigation program which will include a visual assessment of the success rate. The area is relatively dry so the Shire expected a good success rate which will benefit the community and surrounding landowners. The addition of the PHBG in-kind contribution of a community workshop will to help raise awareness to how we can all combat the feral animal management to landholders within the Shire of Waroona which in the long run will assist the Shire in their efforts to help control the feral pest within the Shire.
- Objective: Installation of cockatoo watering station.
Details: Purchase the cockatoo watering station from Town of Victoria Park and install within the open area near the niche wall. This will create a visual awareness of the importance of protecting the Carnaby Cockatoos. This will also be close to water sources and reduce the potential cost impact. After installation the Shire will conduct monthly ground field surveys to monitor the success of the project.
Outcome: Installation of a cockatoo watering stations 'cockitrough' and promotion of the project highlighting the importance of protecting the Carnaby Cockatoos.
- Objective: Installation of cockatoo nesting tubes.
Details: Purchase of cockatoo nesting tubes from SJ Landcare and installation of nesting tubes within suitable trees. Trees will be assessed prior to ensure they are safe and adequate. After installation the Shire will conduct monthly ground level field surveys to monitor the success of the project.
Outcome: Installation of nesting hollows and monthly ground level field surveys.

3. Proposed Clearing Brief

To achieve the expansion of the cemetery the Shire is applying to clear the groundcover/ shrubs within the established trees. Some of the clearing area will consist of built up debris (leaves, sticks and bark), however some native vegetation will still be impacted. The clearing will allow plots to be slotted within the established trees, it will also allow the Shire to undertake weed mitigation and feral pest control.

The ground cover mulching will be completed using a Posi Track Mulcher which is commonly used for forestry mulching. Below are examples of the forestry mulchers which will be available for use.



Image 3: Falcon Forestry Mulching Machine – 2200mm wide & Terex Positrack with Fecon Forestry Mulcher Attachment – 1900mm wide

4. Clearing Period

It is expected the clearing will commence July 2024 and be completed in December 2024 however to cover unforeseen circumstances the requested permit validity period is until July 2026.

5. Calculations

Given that the Shire will only be removing ground cover and shrubs no individual trees have been identified. The Shire has used environment online mapping to help calculate the clearing area.

Clearing Area km²	0.01
Hectares	1 hectare

It is important to note some of the clearing will include built up vegetation debris (leaves, sticks and bark). However, the Shire has opted to use an area calculation.

Note: The conversion method is 0.01 square kilometers to a hectare.

6. Aerial Map

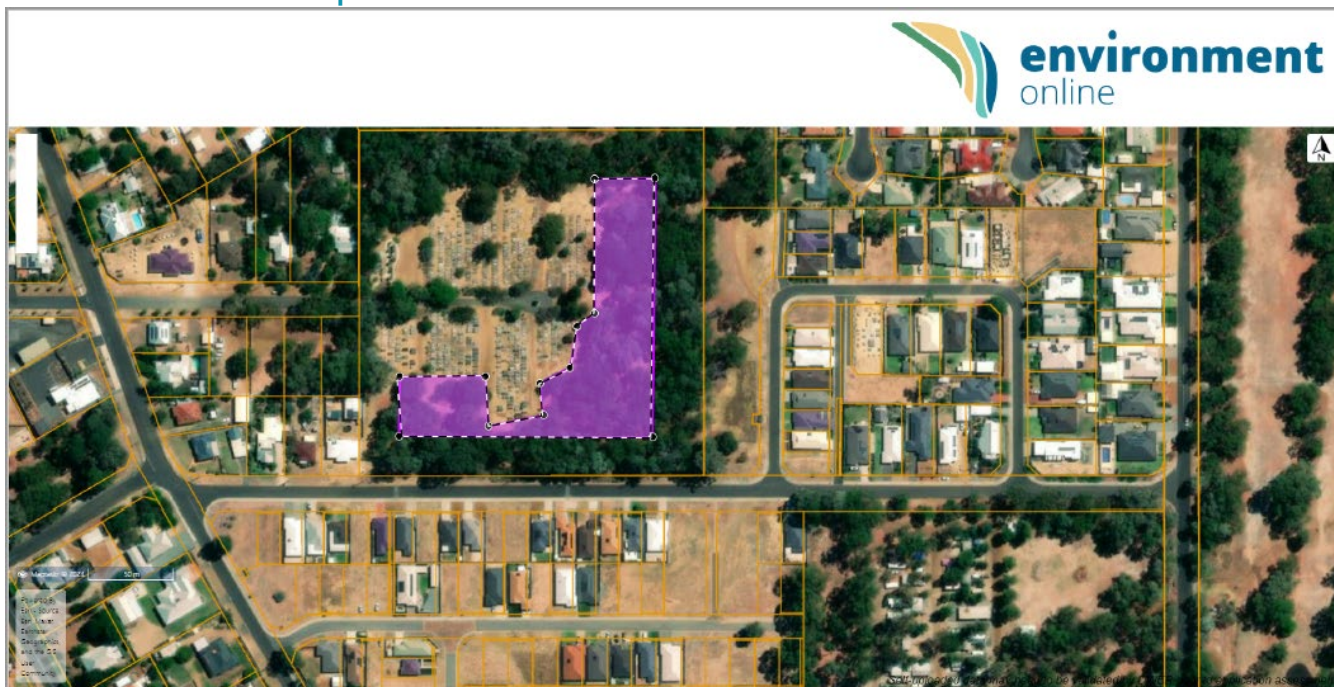


Image 4: Screen shot from Environment Online of proposed ground cover clearing area.



Image 5: The ground cover clearing area conversion on environment online.

The Shire has included the ground cover clearing map as a separate attachment.

7. Photos



Image 6: Identification of photo points



Image 7: The uniting area backing onto the vegetation. The ground cover, shrubs and saplings will be cleared and the established trees including banksias, Marri, Jarrah and Grass Trees will not be cleared.



Image 8: An example of the ground cover buildup. There are some shrubs and saplings within this area which will be removed with the forestry mulching.



Image 9: Minor clearing of ground cover required within this section.



Image 10: This section has a large quantity of Xanthorrhoea Preissii which will not be removed.



Image 11: This section is dense & will be subject to a large amount of ground cover and shrub clearing.



Image 12: This section will involve the clearing of ground cover and shrubs. Established trees including Xanthorrhoea Preissi will remain onsite.



Image 13: This section is dense with shrubs which will be removed however as shown in image 14 the rear is already cleared.



Image 14: This section will not require clearing however some tidy up work will be completed.



Image 15: This section will be subject to groundcover and shrub clearing. All established trees will remain untouched.



Image 16: This section will be subject to groundcover and shrub clearing. All established trees will remain untouched.



Image 17: The large Eucalyptus Marginata will remain however some canopy reduction will occur. The remaining vegetation surrounding (excluding the banksia) will be cleared and reduced.



Image 18: This section is linked to image 17, the shrubs will be cleared, and the banksia trees will remain.



Image 19: This is an example of how the new grave plots will slot into the surrounds of the large established native vegetation. Future canopy reductions will be required but the tree and structure will remain.

8. Revegetation

The site will remain heavily vegetated however revegetation along the western fence line will be undertaken. This revegetation has been included with the State NRM Community Stewardship Funding, if the Shire is unsuccessful in obtaining funding, then revegetation will be budgeted for in the 2025/26 financial year.

9. Flora and Fauna Survey

The Shire obtained Flora and Fauna survey of the site in January 2023. The full reports have been included as additional attachments and the survey files can be provided if required.

- Detailed and Target Flora and Vegetation Survey – January 2023
- Fauna Report – January 2023 (Completed by Greg Harewood on behalf of EcoEdge)

10. Flora Survey Species List

As outlined in the Floral Report Appendix 10

Appendix 10. List of vascular flora found within the survey area.

#	FAMILY_NAME	LATIN NAME	NATURALISED
1	Anarthriaceae	<i>Lyginia imberbis</i>	
2	Apiaceae	<i>Pentapeltis peltigera</i>	
3	Apiaceae	<i>Xanthosia huegelii</i>	
4	Asparagaceae	<i>Chamaescilla corymbosa</i>	
5	Asparagaceae	<i>Lachenalia reflexa</i>	*
6	Asparagaceae	<i>Lomandra integra</i>	
7	Asparagaceae	<i>Lomandra preissii</i>	
8	Asparagaceae	<i>Lomandra purpurea</i>	
9	Asparagaceae	<i>Lomandra sericea</i>	
10	Asteraceae	<i>Arctotheca calendula</i>	*
11	Asteraceae	<i>Hypochaeris glabra</i>	*
12	Asteraceae	<i>Osteospermum ecklonis</i>	*
13	Asteraceae	<i>Sonchus oleraceus</i>	*
14	Asteraceae	<i>Trichocline spathulata</i>	
15	Casuarinaceae	<i>Allocasuarina huegeliana</i>	
16	Colchicaceae	<i>Burchardia congesta</i>	
17	Cyperaceae	<i>Lepidosperma pubisquameum</i>	
18	Cyperaceae	<i>Lepidosperma squamatum</i>	
19	Cyperaceae	<i>Mesomelaena tetragona</i>	
20	Cyperaceae	<i>Morelotia octandra</i>	
21	Cyperaceae	<i>Netrostylis</i> sp. Jarrah Forest (R. Davis 7391)	
22	Cyperaceae	<i>Schoenus efoliatus</i>	
23	Dasypogonaceae	<i>Dasypogon bromeliifolius</i>	
24	Dilleniaceae	<i>Hibbertia hypericoides</i>	
25	Droseraceae	<i>Drosera erythrorhiza</i>	
26	Droseraceae	<i>Drosera pallida</i>	
27	Elaeocarpaceae	<i>Tetratheca hirsuta</i>	
28	Fabaceae	<i>Acacia dealbata</i>	*
29	Fabaceae	<i>Acacia decurrens</i>	*
30	Fabaceae	<i>Acacia iteaphylla</i>	*
31	Fabaceae	<i>Acacia longifolia</i>	*
32	Fabaceae	<i>Acacia podalyriifolia</i>	*
33	Fabaceae	<i>Acacia preissiana</i>	
34	Fabaceae	<i>Acacia pulchella</i>	
35	Fabaceae	<i>Acacia willdenowiana</i>	
36	Fabaceae	<i>Bossiaea ornata</i>	
37	Fabaceae	<i>Chamaecytisus palmensis</i>	*
38	Fabaceae	<i>Daviesia divaricata</i>	
39	Fabaceae	<i>Daviesia incrassata</i>	
40	Fabaceae	<i>Daviesia physodes</i>	
41	Fabaceae	<i>Daviesia rhombifolia</i>	

Image 20: Copy of the Floral Report Species List Part 1 of 3

#	FAMILY_NAME	LATIN NAME	NATURALISED
42	Fabaceae	<i>Gastrolobium praemorsum</i>	
43	Fabaceae	<i>Gompholobium polymorphum</i>	
44	Fabaceae	<i>Hovea chorizemifolia</i>	
45	Fabaceae	<i>Hovea trisperma</i>	
46	Fabaceae	<i>Jacksonia sternbergiana</i>	
47	Fabaceae	<i>Kennedia coccinea</i>	
48	Fabaceae	<i>Kennedia prostrata</i>	
49	Fabaceae	<i>Labichea punctata</i>	
50	Goodeniaceae	<i>Lechenaultia biloba</i>	
51	Goodeniaceae	<i>Scaevola calliptera</i>	
52	Haemodoraceae	<i>Anigozanthos manglesii</i>	
53	Haemodoraceae	<i>Conostylis serrulata</i>	
54	Haemodoraceae	<i>Conostylis setosa</i>	
55	Haemodoraceae	<i>Haemodorum laxum</i>	
56	Hemerocallidaceae	<i>Agrostocrinum hirsutum</i>	
57	Hemerocallidaceae	<i>Caesia micrantha</i>	
58	Iridaceae	<i>Babiana angustifolia</i>	*
59	Iridaceae	<i>Freesia alba × leichtlinii</i>	*
60	Iridaceae	<i>Gladiolus angustus</i>	*
61	Iridaceae	<i>Ixia maculata</i>	*
62	Iridaceae	<i>Patersonia occidentalis</i>	
63	Iridaceae	<i>Romulea rosea</i>	*
64	Iridaceae	<i>Watsonia meriana</i>	*
65	Lamiaceae	<i>Hemigenia pritzelii</i>	
66	Lamiaceae	<i>Lavandula dentata</i>	*
67	Lomariopsidaceae	<i>Nephrolepis cordifolia</i>	*
68	Malvaceae	<i>Brachychiton populneus</i>	*
69	Myrtaceae	<i>Agonis flexuosa</i>	
70	Myrtaceae	<i>Babingtonia camphorosmae</i>	
71	Myrtaceae	<i>Chamelaucium uncinatum</i>	
72	Myrtaceae	<i>Corymbia calophylla</i>	
73	Myrtaceae	<i>Eucalyptus ?sideroxylon</i>	*
74	Myrtaceae	<i>Eucalyptus marginata</i>	
75	Myrtaceae	<i>Hypocalymma robustum</i>	
76	Orchidaceae	<i>Caladenia flava</i>	
77	Orchidaceae	<i>Pyrorchis nigricans</i>	
78	Oxalidaceae	<i>Oxalis pes-caprae</i>	*
79	Oxalidaceae	<i>Oxalis purpurea</i>	*
80	Papaveraceae	<i>Fumaria capreolata</i>	*
81	Phyllanthaceae	<i>Lysiandra calycina</i>	
82	Pinaceae	<i>Pinus radiata</i>	*
83	Pittosporaceae	<i>Billardiera variifolia</i>	
84	Poaceae	<i>Avena barbata</i>	*
85	Poaceae	<i>Bambusa vulgaris</i>	*

Image 21: Copy of the Floral Report Species List Part 2 of 3

#	FAMILY_NAME	LATIN NAME	NATURALISED
86	Poaceae	<i>Briza maxima</i>	*
87	Poaceae	<i>Cenchrus clandestinus</i>	*
88	Poaceae	<i>Cynodon dactylon</i>	*
89	Poaceae	<i>Ehrharta calycina</i>	*
90	Poaceae	<i>Ehrharta longiflora</i>	*
91	Poaceae	<i>Eragrostis curvula</i>	*
92	Poaceae	<i>Neurachne alopecuroidea</i>	
93	Poaceae	<i>Tetrarrhena laevis</i>	
94	Proteaceae	<i>Adenanthos meisneri</i>	
95	Proteaceae	<i>Banksia dallaneyi</i>	
96	Proteaceae	<i>Banksia grandis</i>	
97	Proteaceae	<i>Banksia sphaerocarpa</i>	
98	Proteaceae	<i>Conospermum stoechadis</i>	
99	Proteaceae	<i>Grevillea quercifolia</i>	
100	Proteaceae	<i>Grevillea wilsonii</i>	
101	Proteaceae	<i>Hakea ruscifolia</i>	
102	Proteaceae	<i>Xylomelum occidentale</i>	
103	Rutaceae	<i>Philotheca spicata</i>	
104	Salicaceae	<i>Populus nigra</i>	*
105	Stylidiaceae	<i>Stylidium brunonianum</i>	
106	Tropaeolaceae	<i>Tropaeolum majus</i>	*
107	Violaceae	<i>Hybanthus floribundus</i>	
108	Xanthorrhoeaceae	<i>Xanthorrhoea gracilis</i>	
109	Xanthorrhoeaceae	<i>Xanthorrhoea preissii</i>	
110	Zamiaceae	<i>Macrozamia riedlei</i>	

Image 22: Copy of the Floral Report Species List Part 3 of 3

11. Flora Survey – Vegetation Condition Map

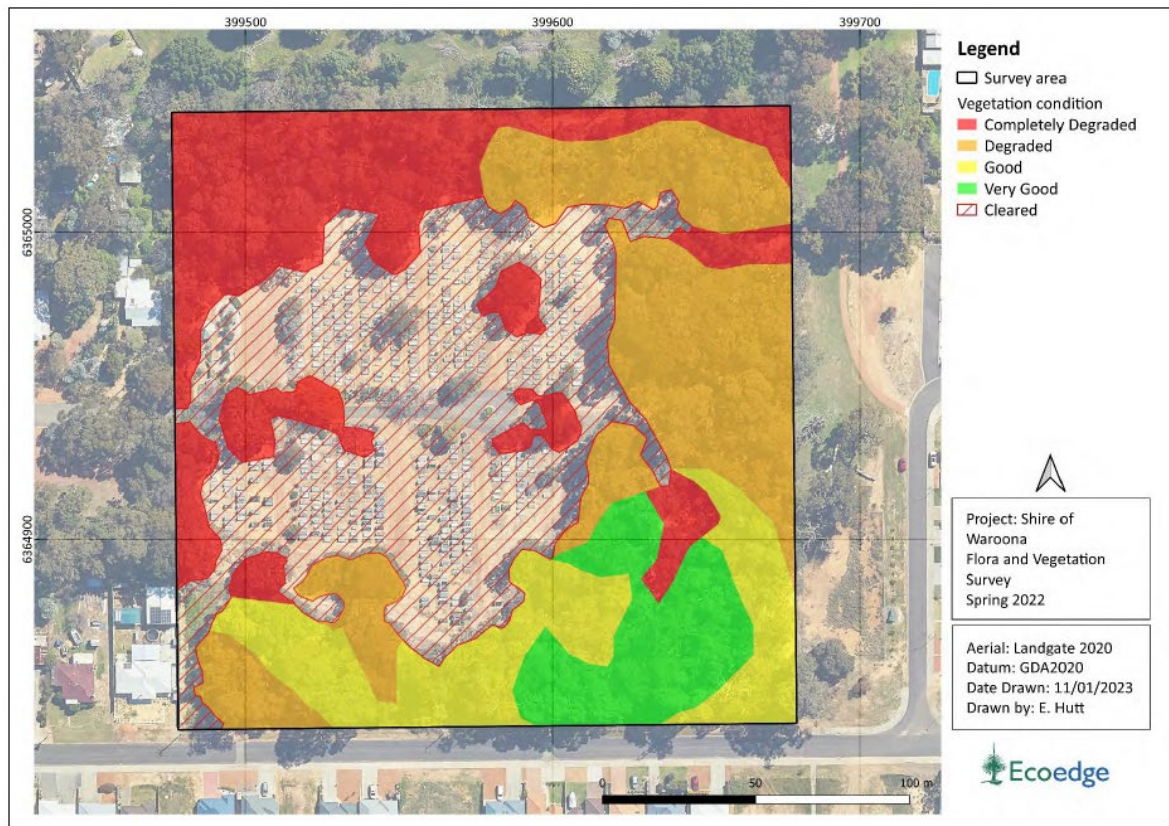


Figure 15. Vegetation condition within the survey area.

Image 23: Figure 15 from the Detailed and Targeted Flora and Vegetation Survey

12. Additional Attachments

- Certificate of Title
- Flora and Fauna Survey (Full Version)
- Environment Online Clearing Map