



Wireless Hill Reserve Management Plan

August 2008



WirelessHill



— City of —
Melville

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PREFACE

This management plan has been prepared by the City of Melville for the purposes of management of the bushland of Wireless Hill Park ('the Park'). The plan highlights the key management issues for the bushland and provides recommended actions to be undertaken by the City of Melville over the next 5 years.

SUMMARY

Wireless Hill is a valuable urban bushland area managed and maintained by the City of Melville. With the impacts of urban expansion, remnant bushland is becoming increasingly degraded and fragmented, placing enormous pressure on habitat values and environmental resources. Since the City of Melville purchased the site in 1969 it has worked to protect, maintain and enhance its environmental, aesthetic, recreational and cultural heritage values.

Wireless Hill is a 40 hectare park containing approximately 38 hectares of remnant bushland surrounding a two hectare area of grassed Parkland, including a Telecommunications Museum, caretakers hut and several other built structures which are of recognised heritage significance.

The Conservation through Reserves System 6 Report (1983) prepared by the Department of Conservation and Environment identified Wireless Hill Park as a System 6 Reserve. This report identified areas of bushland having conservation, landscape and recreational value, and proposed a network of reserves to represent and protect flora and fauna. Wireless Hill Park was identified in this report in particular for its conservation, recreation and heritage values. Wireless Hill Park is Bush Forever Site number 336.

The bushland in Wireless Hill is vulnerable to threatening processes common to areas of urban bushland. Increased and erratic fire regimes, weed infestation, vandalism, erosion and previous clearing have all impacted on the ecological function of the bush and served to decrease biodiversity and environmental values.

The principles that will guide management of the bushland of Wireless Hill Park are:

- To work from the best areas of bushland towards degraded areas;
- To make weed control a high priority;
- To limit new plantings due to the drying climate; and concentrate on weed control thus encouraging natural regeneration of bushland areas

This management plan highlights threatening processes which have an adverse impact on the bushland of the Park, and identifies key management strategies for the park. The management plan includes a detailed schedule of works and budgetary requirements for the five year life of the plan.

1999 MANAGEMENT RECOMMENDATIONS REVIEW

In the 1999 Management Plan a number of recommendations were made with regards to managing the Park. Before any new recommendations are proposed it is important that the precursors be assessed in terms of completion and whether they still have relevance in the updated plan.

Flora and Weed Management

- 3.1.1 That a bushland regeneration plan be developed, implemented and reviewed on an annual basis to address weed control and eradication, re-vegetation, habitat enhancement, fringe degradation and general maintenance.

Veldt grass control has been the primary focus of the bush regeneration plan. However the cost of this treatment has allowed only one spray per year in the areas of high bushland quality. The amount of veldt grass has been reduced but unfortunately there are a suite of new more invasive weeds that requires immediate attention.

In the initial years of the plan, planting of new tube stock was a high priority. While the planting initially met with some success the drying condition necessitated adopting a policy of increased weed control in order to control competition from weeds and encourage the native seed bank to germinate when conditions are suitable. In this way regeneration proceeds at a more natural pace and can be sustainable in the future.

- 3.1.2 That vegetation condition monitoring quadrats be utilised as an indicator of the effectiveness of bushland regeneration work.

Quadrats were set up a number of times but the removal of pegs and the lack of resources to monitor regeneration work from these quadrats on a regular basis meant that this recommendation was not been effectively completed.

In 2006 a bushland mapping project was completed by consultants to identify and map the top 15 weeds, bushland communities and bushland condition. Given the length of time that it takes to see improvement in bushland condition it is probably more effective to have these factors mapped every five years to determine overall condition of the park.

That the purpose of Wireless Hill Park as stipulated in the Western Australian Planning Commission's Metropolitan Regional Scheme (1961), be changed from Public Open Space and Recreation to Conservation and Recreation.

In 2005 an application was made to DOLA (now the DLI) to amend the purpose. Given the Cultural heritage and the previous usage of the site it was decided that Conservation Parkland, Recreation, Communication and Heritage would be a more appropriate purpose. The amendment has been tabled in both houses of Parliament and is awaiting a final approval.

Fauna

- 3.2.1 That a bushland regeneration plan be developed annually to address the re-vegetation of native fauna habitat. See 3.1.1

- 3.2.2 That eradication of fox populations be undertaken with emphasis given to passive control options.

Foxes are territorial, highly mobile, adaptable and uncontrolled in other areas. Therefore they will migrate into an area where there is a void left through fox control measures. Fox control has been implemented using trapping methods by an experienced professional on a needs basis and will need to continue in the same capacity.

3.2.3 That rabbit populations be monitored and eradicated where necessary.

As with fox control rabbit control has been implemented on a needs basis and will be continued.

3.2.4 That promotional material on Wireless Hill Park be produced for distribution to the local community to provide information on practices that can be adopted to minimise environmental impact on the park, such as the control of domestic pets.

In 2004 a wildflower walk was developed with interpretive signage to guide tourists around a particularly good area of bushland in an attempt to control trampling of the bushland.

Leaflets have been produced including maps of the wildflower walk and bird watching in the park. These are distributed through the Civic Centre and libraries.

Fire Management

3.3.1 That fire management practices within Wireless Hill Park be undertaken according to the City of Melville's Bushfire Management Strategy.

Fire management has been undertaken in accordance with the City of Melville Bushfire Management Strategy.

3.3.2 That perimeter firebreaks be maintained such that there is no foliage overhanging the boundary of the park or within three metres of the boundary between 0.5 and 5 metres above ground level, as per Figure 7. Foliage lower than 0.5 metres will not be removed.

Completed as per the Bushfire Management Strategy.

3.3.3 That all tracks throughout the park be maintained to prevent weed spread along their periphery to enhance their effectiveness as firebreaks, and be maintained to a three metre width with no foliage between 0.5 and 5 metres above ground level, as per Figure 8.

Completed as per the Bushfire Management Strategy.

3.3.4 That the removal of dead vegetation be warranted only if it constitutes a fire risk, holds no habitat value, or if its removal does not enhance the onset of erosion. Dead vegetation along the periphery of the park (to a maximum of 20 metres), adjacent to residential areas may be suitably mulched where appropriate. These are to be re-vegetated with local native species.

The clearance of 20 metres of dead material from the periphery was carried out in 2005. This reduced the fuel load around the perimeter of the park. Public response to this strategy was positive and these actions should be maintained in the reviewed plan.

3.3.5 That consideration be given to the installation of emergency fire mains throughout the park, and appropriate resources be allocated for their instalment.

Prohibitive costs and more recent water shortages have resulted in no emergency fire mains being installed and won't be considered further.

Landscape Plan and Aesthetics

3.4.1 That the central parkland be redeveloped according to Stages 1 and 2 of the Wireless Hill Park Landscape Plan, as indicated by Table 3 and the central area concept plan in Figure 9. Completed.

3.4.2 That all access tracks as indicated in Figure 10 be rationalised or closed for regeneration.

Closing of unauthorised and unwanted access tracks has been partially completed. Successful completion of this task will only occur when a perimeter fence is installed around the park.

3.4.3 That gaps within the pine post and rail fence surrounding the central ring road be closed to discourage informal pedestrian access. The post and rail fence remains intact. There was no need to implement this initiative.

Erosion

3.5.1 That an annual bushland regeneration plan, as discussed in Section 3.1, Flora and Weed Management address groundcover revegetation.

See 3.1.1

3.5.2 That eroding tracks as previously indicated in Figure 10 be upgraded. Completed.

Vandalism and Security

3.6.1 That improved lighting be installed within the central ring road as part of Stage 2 of the Wireless Hill Park Landscape Plan - Central Area Concept Plan. Improved lighting was installed in 2005. Carpark lighting was due to be installed in 2007.

3.6.2 That the community be educated on appropriate practices that can be adopted to minimise environmental impacts on the park. Ongoing environmental education programs are being run from the Piney Lakes Environmental Education Centre (PLEEC).

Environmental Education

3.7.1 That interpretive signage be developed as part of an overall signage plan for the park. Interpretive signage was not developed. As part of a new masterplan it is anticipated that a heritage and interpretation plan will be developed.

3.7.2 That a site specific environmental education package be developed for Wireless Hill Park and be distributed to the community, in conjunction with interpretive presentations.

An environmental education package has not been specifically developed for Wireless Hill however leaflets for bird watching and the wildflower walk have been developed and distributed.

- 3.7.3 That promotional material on Wireless Hill Park is produced for distribution to the local community to provide information on practices that can be adopted to minimise environmental impact on the park.

See 3.2.4

- 3.7.4 That Council encourages the formulation of a new community group to assist in the implementation of this management plan and bushland rehabilitation strategies for Wireless Hill Park.

The Friends of Wireless Hill community group was revitalised in 2001 and has been assisted where possible by the City of Melville in implementing the management plan and bushland rehabilitation strategies.

Cultural Heritage Management

- 3.8.1 That the Wireless Hill Telecommunications Museum and Precinct Conservation Plan continue to be utilised as a management tool to provide for the protection and enhancement of the cultural heritage resources of Wireless Hill Park.

The conservation Plan is still in use as a management tool to enhance and protect the cultural heritage resources of Wireless Hill.

Implementation and Monitoring

- 4.1 That monitoring quadrats be monitored on a quarterly basis to assist in best practice bushland maintenance, and to provide an indicator of progress.

Monitoring quadrates were set up in the park – see 3.1.2

- 4.2 That the progress of this management plan be reported quarterly.

The progress of the management plan was reported in house on a quarterly basis.

- 4.3 That Council give consideration to allocating further staffing resources to assist in the implementation of this management plan, and to meet the expectations of the community.

No further staffing was implemented due to budgetary constraints. Since the implementation of this plan in 1998 additional resources have been allocated to the Environmental Unit, for environmental work across the City.

SUMMARY OF RECOMMENDATIONS AND MANAGEMENT STRATEGIES FOR THE 2008 WIRELESS HILL MANAGEMENT PLAN

The list below summarises the various management issues and management recommendations.

Biodiversity Conservation

Regularly update inventories on flora in Wireless Hill and integrate research outcomes into management strategies.

Weed Management

Continue to conduct appropriate weed control programs involving a number of weed management techniques (including help from the Friends Group).

To review annually the Friends of Wireless Hill's weed program and determine the success and extent of area that the group hand weed.

Disease and Pathogens

Assess, map, and treat *Phytophthora* dieback infestations as needed

Ensure City of Melville staff working in the park are aware of the hygiene requirements in areas affected by dieback

Ensure FESA adheres to the policy (as outlined in the Bushfire Management Strategy 2007) of remaining on established tracks when fighting fires to minimise the spread of dieback

Consider more education/interpretation on dieback in the upcoming Interpretation Management Plan for the park

Regularly liaise with other agencies to monitor the latest information and research into grass tree deaths and stress, its causes and possible treatments.

Native and Introduced Fauna

Investigate the installation of nest boxes for habitat creation for birds and small mammals

Monitor the presence of feral animals (rabbits, foxes and bees) and control when required.

Maintain signage regarding dog control in bushland areas of the park

Fire Management

Manage fire risk in the park in accordance with the Bushfire Management Strategy (2007)

Continue to remove dead wood material from 15 metres around the perimeter of the park to reduce fire risk and improve community perception about fire risk in the park.

Access and Track Management

Fence the perimeter of the park with an appropriate fence to help maintain security and control access

Allow unauthorised/unwanted tracks to naturally regenerate once access has been blocked.

Regularly contact bus tour companies to remind them that visitors to the park should be confined along existing paths to protect vegetation and prevent erosion

Consider creating a fee system for tour companies using the park for commercial activities on a regular basis

Erosion

Annually review all hard surface tracks in winter to see where erosion is causing vegetation damage.

Vandalism and Security

Fence the perimeter of the park to prevent unauthorised entry of vehicles (recommendation 14).

Request regular patrols by the Community Security Service to deter vandalism and antisocial behaviour in the park.

Environmental Education and Community Involvement

Work with the Friends of Wireless Hill to improve communication for example by attending key friends group meetings and making site visits to plan future restoration works.

Create opportunities for education and training in Bushland Management techniques for the Friends of Wireless Hill.

Support activities such as the guided Wildflower Walk.

Provide opportunities and support for funding applications for the friends group as they arise.

SECTION 1 - THE STUDY AREA

LOCATION

1.1 Location and Land Tenure

Wireless Hill Park (Reserve Number 29813) is a 40 hectare Class A Reserve situated in the Perth suburb of Ardross. It is bounded by Canning Highway to the north, Davey Street to the south, McCallum Crescent to the east and Barnard Street to the west, and is predominantly surrounded by residential development.



Figure1 Wireless Hill Park Aerial Photo

Wireless Hill is reserved for Parks and Recreation under the City of Melville's Community Planning Scheme Number 5 and the Western Australian Planning Commission's Metropolitan Regional Scheme (1961).

To reflect the conservation significance of Wireless Hill Park, the purpose of the reserve as listed in the Planning Scheme is to be changed from "Public Open Space and Recreation" to "Conservation Parkland, Recreation, Communication and Heritage Precinct".

The City of Melville has worked with LANDGATE/DPI to amend the purpose of the reserve which has been tabled in both houses of Parliament and is awaiting a final approval.

HISTORY

1.2 European History

Radio telecommunications provided one of the most important links between Australia and the rest of the world very early in the twentieth century. These links were particularly significant to the small community of Perth, being one of the most remote cities in the world.

In 1911, the Federal Government surveyed the Wireless Hill Park area in Applecross, and subsequently purchased the site in September of that year, at which time construction of the Wireless Hill station or Applecross Wireless Station began. It was constructed by the Australian Wireless Company and engineers from the German firm Telefunken and Co. oversaw the installation of the equipment.

The bushland in most of the area now known as Wireless Hill was completely cleared for the development of the station.



Figure 2 Photograph of Wireless Hill 1913. Note the vegetation was almost completely cleared to install the telecommunications infrastructure.

The Bushland:

Once the infrastructure was developed, the remainder of the site was planted with perennial veldt grass (*Ehrharta calycina*) for soil stabilisation. Veldt grass has now been recognised as a significant weed in urban bushland, threatening biodiversity and increasing fire risk. The cleared area was not actively managed, and since the soil of the area still contained a rich diversity of natural vegetation, the native local species began to regenerate. Although this has been a slow process, and has been significantly hindered by the presence of Veldt grass and other introduced weeds, the bushland has slowly naturally regenerated into a patchy mosaic of woodland communities to form a significant remnant of natural bushland south of the Swan River.

The Wireless Tower and Central Parkland Area:

Together with its sister station in Pennant Hills, Sydney, Wireless Hill was set up to establish direct Wireless telegraphy across Australia from 1912. With Pennant Hills it formed an important link in a network of wireless stations established around the Australian coastline just prior to the First World War. It was significant in providing communications for coastal shipping and commanded the seaward approach on the western side of the continent, which greatly improved the safety of ships at sea.

The station played a part in the development of commercial radio broadcasting and experimental shortwave radio, and was part of a network of five main radio telecommunication stations in Australia participating in international, national, state-wide and regional radio communications and broadcasting.

The Wireless Hill station has strong associations with important developments in wireless telegraphy and broadcasting in Australia and with the development of Amalgamated Wireless Australia (AWA), and the Overseas Telecommunications Commission (OTC). Its importance can be attributed to its association with the founding phase of technological development of national and international radio communication, developments which have had a significant role in the human occupation and evolution of the State and the Nation.

The Wireless Hill station was officially decommissioned in 1967. At this time, the bushland, was slowly regenerating open woodlands of Banksia (*Banksia spp*), Jarrah (*Eucalyptus spp*) and Marri (*Corymbia spp*). The land was vested in the City of Melville in August 1969 for the purposes of developing it as an urban bushland reserve, and was named Wireless Hill Park in February 1971. Since this time, various concepts have been put forward for the development of Wireless Hill Park, but the consensus of local residents and the Council has been to retain it as a natural bushland reserve and to promote the site's rich cultural heritage.

The Wireless Hill Telecommunications Museum in the central Parkland area off Telefunken Drive was officially opened in 1979. This museum is open at various times during the year and is managed by the City of Melville to provide an interesting link to the history of the area. Together with the bushland reserve, it is listed on the Register of the National Estate, West Australian Heritage list and City of Melville Municipal Inventory.

Aboriginal History

The Beeliar people were the custodians of the Melville, Fremantle and Cockburn districts. Wireless Hill was once known as 'Yagan's lookout' as the Hill provided perfect views of the surrounding area for Yagan, the son of Midgegooroo, the leader of the Beeliar peoples. Yagan was a prominent figure in the early days of the Swan River colony, respected by the settlers for his strong personality and independence. He also advocated peace, believing indigenous and non indigenous people could live in harmony.

PHYSICAL ENVIRONMENT

1.4 Climate

The climate of the Perth region is Mediterranean, which consists of two seasons; a warm, dry period from November to April, and a cool, wet period from May to October. The average annual rainfall is 870mm with approximately 90% of this falling during the cool, wet period. The average annual Class A pan evaporation is 1820mm. Rainfall only exceeds evaporation from May to August.

The mean daily maximum temperature ranges from 17.4 C in July to 30 C in February, and mean daily minimum temperatures range from 9 C in July to 18.1 C in February. In summer, subtropical high pressure systems bring fine and warm to hot conditions. In winter sub-polar, low pressure systems bring rain bearing depressions and cold fronts.

1.5 Topography, Geology and Soils

Wireless Hill is located on the Swan Coastal Plain which extends from the Darling Scarp westwards to the Indian Ocean. The Plain is comprised of a series of dunes running parallel with the coast, which were formed by wind and wave action during the Quaternary era. The topography of the site is indicated below in Figure 3.



Figure 3 Topographical map of Wireless Hill

The steep slopes of the northern aspect of the park bordering Canning Highway rise to the peak of Wireless Hill which encompasses the central ring road. The topography of the site flattens out from this point through to the southern half of the park. The highest point of elevation of Wireless Hill is 43 metres above sea level. Gradients range from 6% to the south and west, to up to 21% on the slopes south of Canning Highway.

The City of Melville consists of a total area of 52.73km², and is dominated by two dunal systems, the Spearwood and Bassendean Dunes, which run parallel to the coastline. The Spearwood Dune System occupies most of the city's area, and is characterised by calcareous sands of variable depth, that overlie limestone. The overlying yellow and brown soils are typically infertile and highly porous, but are capable of supporting bushland communities.

Particularly large masses of these calcareous sands were shifted and deposited to form Wireless Hill, and because of the proximity of Bassendean Dune system adjacent to Wireless Hill to the east, many of the soil and vegetation associations in the Park are influenced by both dunal systems. This has resulted in a rich assortment of vegetation.

VALUES

Wireless Hill Park is a valuable urban bushland reserve that is listed in Perth's Bushplan (2002). The Park is also assessed in the City of Melville's bushland Priority system as being a Priority 1 reserve, recognised for its very good bushland condition and biodiversity values. These reports recognise the Park as a regionally significant remnant of native bushland that provides valuable flora and fauna habitat. The park requires ongoing management and protection to conserve and enhance these values into the future.

In 1995 and in 2005, surveys to assess public perceptions, recreational uses of the Park and the cultural and heritage values were undertaken by Shirley Barnes Associates. In 1995 the Park was used mainly by locals, with a small percentage of regional visitors, usually in the spring to admire wildflowers. The locals using the area predominantly used the Park for dog walking, BBQ's and family get-togethers in the central parkland. Most visitors enjoyed the bushland area in a passive way, some used the park for walking and to access other parts of Melville such as the adjacent shopping centre. The landscape amenity and facilities in the central Parkland were improved as a result of this survey to encourage visitors to the area.

The 2005 survey found that the Park is used mostly by locals, at least until spring, when large groups of visitors descend on the Park to view the wildflowers. Personal communication with the Friends of Wireless Hill suggests that since 1995, regional visitation has increased to include large numbers (over 5000) of visitors from the Perth region, overseas and interstate who visit because the Park has grown in popularity as a Spring Wildflower destination. The Friends of Wireless Hill regularly express concern about visitors walking off paths and damaging bushland vegetation in order to see popular wildflowers such as orchids. In 2004, this issue was addressed by a Lottery West grant which established a detailed wildflower walk path adjacent to the major parking area so visitors can be effectively streamlined through the Park on tracks to minimise vegetation damage. This path has protected the vegetation to some extent.

The results of the 2005 survey show the community recognises Wireless Hill Park as a significant reserve and appreciates the improvement in infrastructure and a reduction in vandalism since the previous survey.

SECTION 2 - MANAGEMENT ISSUES AND PROPOSED RESPONSES

BIODIVERSITY CONSERVATION

1.6 Vegetation structure

The vegetation of Wireless Hill Park is typical of the junction between the Karrakatta soils of the Spearwood dune system and the Bassendean dune soils to the east. The park sits at the junction between these two soil types and is therefore richer and more complex than reserves to the east or west of this junction.

Since clearing of the park in 1913, the vegetation has regenerated naturally from the local seed bank. The vegetation consists predominantly of open Jarrah (*Eucalyptus marginata*) and Marri (*Corymbia calophylla*) woodland with a mid-storey of various shrubs including *Banksia attenuata*, *Jacksonia furcellata*, *Jacksonia sternbergiana*, *Banksia menziesii* and *Allocasuarina fraseriana*. The under-storey consists of a diverse community of woolly bush, (*Adenanthos cygnorum*), *Macrozamia reidleyi*, *Xanthorrhoea preisii* and low shrubs, herbs and perennials including *Anigozanthos mangliesii*, *Hibbertia hypericoides*, *Hypocalymma robustum* and *Dianella revoluta*. The veldt grass (*Ehrharta calycina*) which was planted soon after the clearing to suppress erosion has become a noxious weed.



Figure 4 Open Banksia woodland in Wireless Hill.

Some interesting and complex community relationships and structures occur throughout Wireless Hill Park and at times it is difficult to understand why one particular vegetation community is more species rich than another or why there is a notable absence of particular species from area to area.

For example *Grevillea vestita* is a relatively common plant, yet it occurs in only one location in Wireless Hill Park, where it is restricted to a small locality on the western edge of the park, forming a large part of the under-storey. Other species of interest include *Lepidospermum scabrum*, and *Melaleuca scabra*. *L.scabrum* is scattered only on the northern aspect of the park, yet noticeably absent on the southern aspect. *M.scabra* is found only in the shade of Jarrah trees on the southern side of the park. These species may have been widespread over the whole of the park, but for some reason were unable to successfully regenerate after the clearing.

There is evidence that a small section of the Wireless Hill bushland, located adjacent to the City of Melville council building to the east of the recreational parkland, is the only area of vegetation which was not cleared in 1913. In this small section of the park the tree species, including *Eucalyptus marginata* (Jarrah) and *Corymbia calophylla* (Marri) are generally taller and much older than other areas and contain many nest hollows.



Figure 5 An example of a large tree in Wireless Hill remnant bushland

In 2005 Ecoscape (environmental consultants) were employed to survey the condition of the parks vegetation. The map below presents the vegetation communities as mapped in 2005.

In general, the vegetation consists of open woodland and forest with an overstorey of *Banksia* spp, *Eucalyptus marginata*, *Corymbia calophylla* and *Jacksonia* species; *Xanthorrhoea preissii* and other mid-storey species and an understorey of *Mesomelaena* sedge and *Stirlingia* species. The full breakdown of vegetation associations is listed in the table 1.

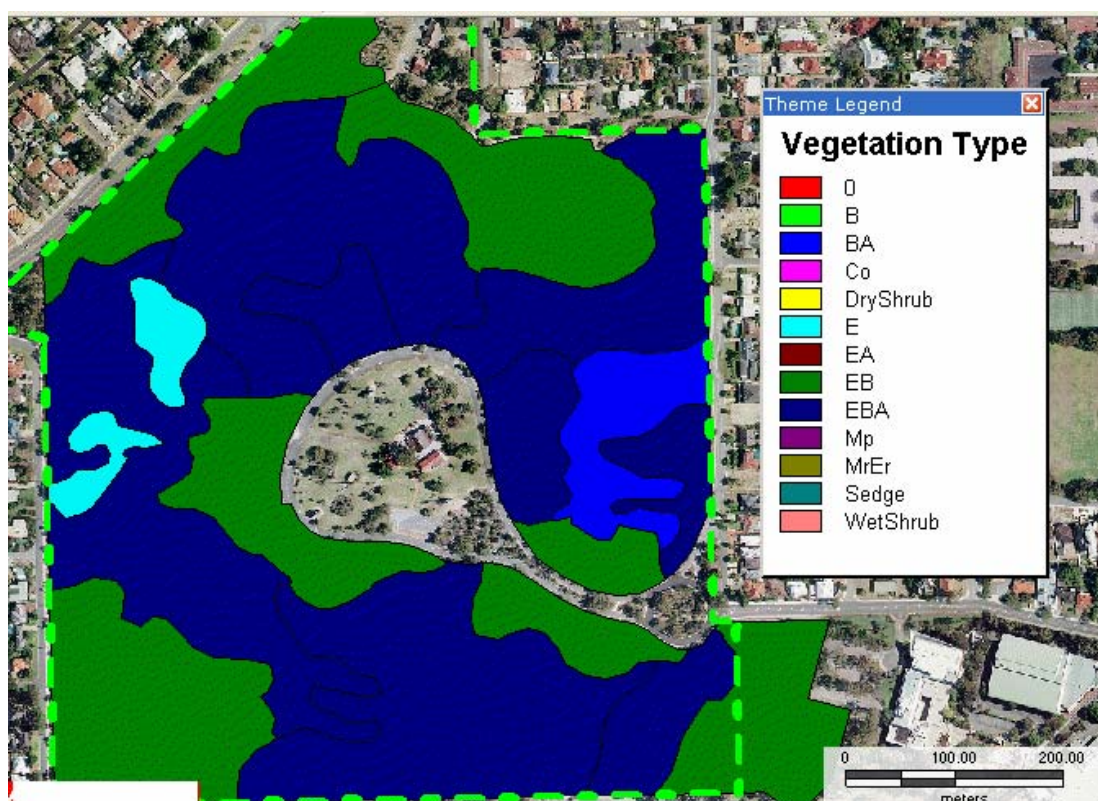


Figure 6 Wireless Hill over-storey vegetation map, 2005.

EB *Eucalyptus, Banksia*
EBA *Eucalyptus, Banksia, Allocasuarina fraseriana*
E *Eucalyptus sp.*
BA *Banksia sp., Allocasuarina fraseriana*

Table 1: Summary of vegetation associations

Vegetation Association	Dominant vegetation type
1. Along Davey Road to the south of the main body of bushland	Low open forest of <i>Allocasuarina fraseriana</i> , <i>Eucalyptus marginata</i> , <i>Banksia spp</i> , over open shrubland of <i>Macrozamia reidleyi</i> , over low closed heath of <i>Stirlingia latifolia</i> , <i>Hibbertia racemosa</i> and sedgeland of <i>Mesomelaena stygia</i>
2. Corner of Davey Road and Barnard Street, in south western corner of bushland	Woodland of <i>Banksia attenuata</i> , <i>Banksia menziesii</i> and <i>Eucalyptus marginata</i> , over open shrubland of <i>Xanthorrhoea preissii</i> and <i>Macrozamia reidleyi</i> , over mixed closed heath and sedgeland of <i>Mesomelaena stygia</i> .
3. Area along Barnard Street, west side of Wireless Hill bushland	Low open woodland of <i>Allocasuarina fraseriana</i> , <i>Eucalyptus marginata</i> and <i>Banksia attenuata</i> , over shrubland of <i>Xanthorrhoea preissii</i> , <i>Adenanthos cygnorum</i> and <i>Macrozamia reidleyi</i> over low closed heath of <i>Hibbertia racemosa</i> and sedgeland of <i>Mesomelaena stygia</i> .
3a Is north of 3a, set back from Canning Highway and running to lower Hickey Street	Low open woodland of <i>Allocasuarina fraseriana</i> , <i>Eucalyptus marginata</i> and <i>Banksia attenuata</i> over open shrubland of <i>Xanthorrhoea preissii</i> , <i>Macrozamia reidleyi</i> and <i>Acacia pulchella</i> , over sedgeland of <i>Mesomelaena stygia</i> .

Vegetation Association	Dominant vegetation type
4. Pocket of vegetation along Barnard Street offset from road amongst 3a	Open forest of <i>Corymbia calophylla</i> , over open shrubland of <i>Xanthorrhoea preissii</i> , <i>Macrozamia riedlei</i> , over grassland of <i>Mesomelaena stygia</i> , * <i>Ehrharta calycina</i> .
4a. Pocket of vegetation along Barnard Street offset from road amongst 3b	Open forest of <i>Corymbia calophylla</i> , over open shrubland of <i>Xanthorrhoea preissii</i> , <i>Macrozamia riedlei</i> , over sedgeland of <i>Mesomelaena stygia</i> and grassland of * <i>Ehrharta calycina</i>
5. Area of land to north west along Canning Highway	Low open forest of <i>Banksia attenuata</i> , <i>Banksia menziesii</i> , <i>Eucalyptus marginata</i> , over tall shrubland of <i>Xanthorrhoea preissii</i> , <i>Macrozamia reidlei</i> , over grassland of * <i>Ehrharta calycina</i>
6. Northern section of Park running along lower and upper Hickey Street	Low woodland of <i>Banksia attenuata</i> , <i>B. menziesii</i> , <i>Eucalyptus marginata</i> over tall shrubland of <i>Adenanthos cygnorum</i> , <i>Xanthorrhoea preissii</i> , <i>Macrozamia riedlei</i> over sedgeland of <i>Lepidospermum scabrum</i> , <i>Mesomelaena stygia</i> .
7. Area to north east along top of McCallum Crescent	Open forest of <i>Eucalyptus marginata</i> , <i>Corymbia calophylla</i> , <i>Banksia attenuata</i> , <i>Banksia menziesii</i> over shrubland of <i>Xanthorrhoea preissii</i> , <i>Macrozamia riedlei</i> over mixed closed herbland.
8. Pocket of vegetation along McCallum Crescent and south	Low open woodland of <i>Banksia menziesii</i> , <i>Allocasuarina fraseriana</i> , over open heath of <i>Adenanthos cygnorum</i> , over sedgeland of <i>Mesomelaena stygia</i> , open herbland of <i>Jacksonia sericea</i> and grassland.
9. Small pocket of vegetation along McCallum Crescent to south of 8	Low open woodland of <i>Banksia menziesii</i> , <i>Allocasuarina fraseriana</i> over shrubland of <i>Xanthorrhoea preissii</i> , <i>Macrozamia riedlei</i> over mixed closed herbland.
10. Vegetation adjacent to entry and exit roads at roundabout on Telefunken Drive	Woodland of <i>Corymbia calophylla</i> , <i>Banksia attenuata</i> , <i>Banksia menziesii</i> over low open shrubland of <i>Macrozamia riedlei</i> , <i>Jacksonia sericea</i> , <i>Adenanthos cygnorum</i> over open sedgeland of <i>Mesomelaena stygia</i> , herbland of <i>Hibbertia racemosa</i> .
11 Area to south of Telefunken Drive from first car park to third car park	Open woodland of <i>Eucalyptus marginata</i> , <i>Corymbia calophylla</i> , <i>Banksia attenuata</i> over Shrubland of <i>Xanthorrhoea preissii</i> , <i>Macrozamia riedlei</i> over mixed low closed heathland sedgeland of <i>Mesomelaena stygia</i> .
12. North of Telefunken Drive amongst vegetation 3b	Woodland of <i>Allocasuarina fraseriana</i> , <i>Eucalyptus marginata</i> , <i>Banksia attenuata</i> over tall open shrubland of <i>Adenanthos cygnorum</i> , <i>Xanthorrhoea preissii</i> , over herbland of <i>Jacksonia sericea</i> and sedgeland of <i>Mesomelaena stygia</i> .
13. South eastern corner from near roundabout at entry to near council building and through to Davey Street	Low open woodland of <i>Eucalyptus marginata</i> , <i>Banksia attenuata</i> , <i>Banksia menziesii</i> over low open shrubland of <i>Macrozamia riedlei</i> over herbland of <i>Stirlingia latifolia</i> and sedgeland of <i>Mesomelaena stygia</i>
14. Most eastern corner from near council building and around council car park (most eastern patch)	Open forest of <i>Corymbia calophylla</i> , <i>Banksia attenuata</i> , <i>Banksia menziesii</i> and <i>Eucalyptus marginata</i> over low open shrubland of <i>Macrozamia riedlei</i> , <i>Xanthorrhoea preissii</i> , <i>Jacksonia sternbergiana</i> over herbland of <i>Stirlingia latifolia</i> , <i>Hibbertia racemosa</i> and sedgeland of <i>Mesomelaena stygia</i> .

Over the years, several flora surveys have been undertaken for Wireless Hill Park and since the 1985 Management Plan, an ongoing flora list and herbarium has been regularly updated. This is provided in Appendix 9. The 1998 Management Plan reported the presence of the native grass, *Stipa compressa*, in an undisturbed and isolated pocket of the eastern section of the park. This native grass, like other grass species, is killed by the herbicide Fusilade which is used annually to control grassy weeds such as veldt grass. Work crews and the Friends group need to know where there are populations of native grasses in the Park so care can be taken in weeding and spraying. The Parks flora has not been comprehensively surveyed for many years. A comprehensive flora survey is needed to provide an accurate list of the flora present in the park, including the presence of priority species.

1.7 Bushland Condition

Whilst vegetation communities remain intact at Wireless Hill, historical activities have impacted on bushland condition considerably. Clearing has reduced the height of the over storey to 10 metres, as a result the vegetation lacks the maturity of uncleared woodland, with nest hollows and mature over storey trees. A bushland condition map is provided over the page. This map indicates that despite changes in vegetation type, bushland condition is impacted mostly through management practices and human use. Degraded areas are located around the perimeter of the Park where weeds and other threats such as human interference are common. Tracks are areas where weeds can take hold, and where fire and trampling can lead to habitat disturbance and vegetation loss.

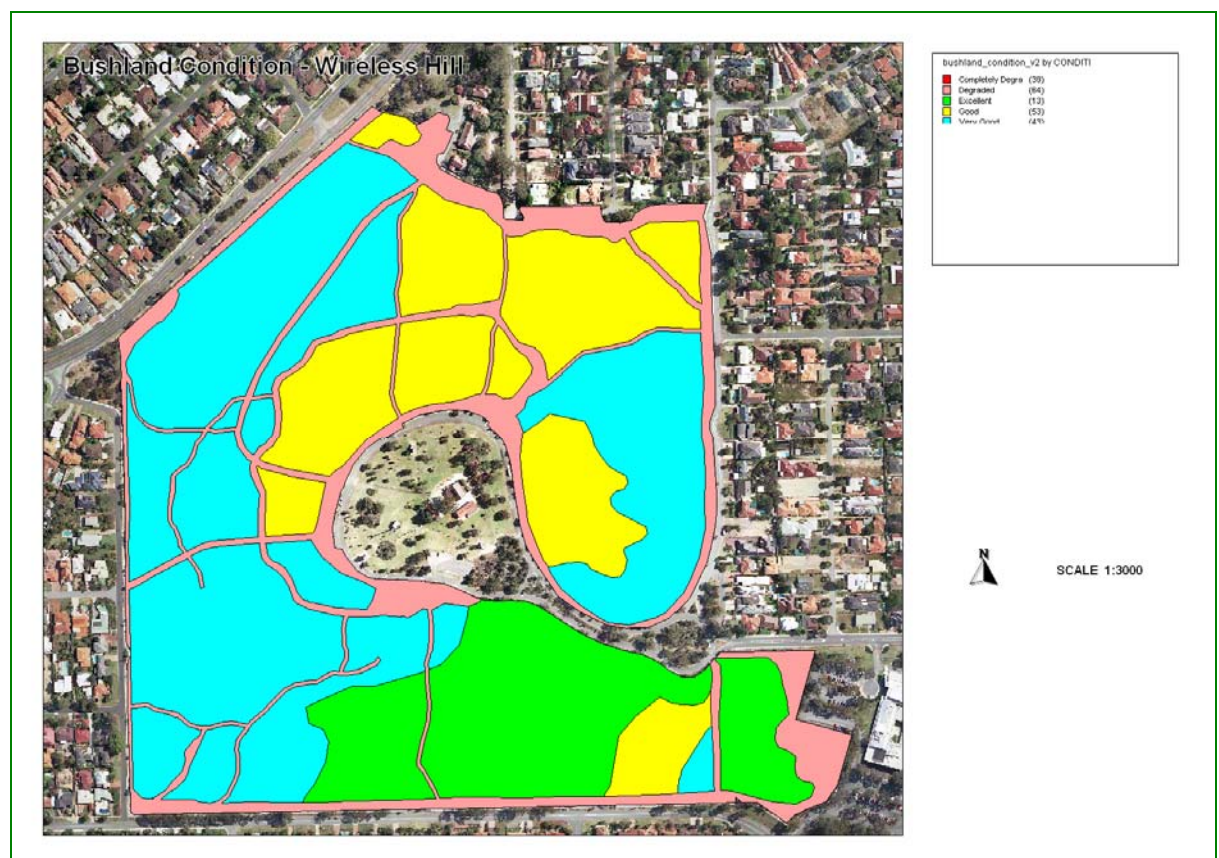


Figure 7 Classification according to Keighery (1994)

Pristine	Pristine or nearly so. No obvious signs of disturbance
Excellent	Vegetation structure intact, disturbance affecting individual species and weeds are non-aggressive species
Good	Vegetation structure altered, obvious signs of disturbance
Degraded	Basic vegetation structure severely impacted by disturbance. Scope for regeneration but not to a state approaching good condition without intensive management
Completely Degraded	Structure of the vegetation is no longer intact and area is completely or almost completely without native species.

Table 2 Description of Keighery's classification system (1994)

The survey found that much of the park can be classified as being in excellent to very good condition. This is an improvement from the previous survey undertaken in 1998 and discussed in the 1999 Management Plan which reported that much of the park could be classified as being in “good” to “very good condition”.

Despite being in relatively good condition, most of the park suffers from weed infestations, particularly adjoining tracks, major roads and entrance points; seriously degraded areas along Canning Highway and Barnard Street need attention as these are highly visible to the public.

Areas of excellent condition bushland are concentrated on the south side of the park in Jarrah woodland on reasonably flat topography. Open areas of bare earth contain few weeds and although this area is dotted with paths, few weeds have taken hold and the under-storey is rich in herbs and native grasses. Protecting the bushland from unauthorised access and managing weeds is the highest priority management strategy for this area.



Figure 8 Managing erosion and reducing weeds adjacent to paths can help improve the area on the Barnard Street side of the Park, shown at left.

The bushland to the west and north of the park is in Good condition. The land here is steep and has an over-storey containing the introduced *Eucalyptus citriodora*. Parts of this area are affected by dieback (See Appendix 3).



Figure 9 The photograph to the left shows introduced species including *Eucalyptus citriodora*, probably planted in the early 1930's. These trees may provide some habitat for visiting avian species; however any juvenile or suckering plants should be removed to prevent the spread of these species in the Park.



Figure 10 Track Erosion. Steep tracks and sandy soils make erosion commonplace in this part of Wireless Hill. Track rationalisation and stabilisation will help to reduce the damage caused by this activity in the Park and prevent weed infestations over time.

Frequent fire has led to changes in bushland condition in parts of the park. An area off Davey Road between Davey Road and the roundabout on Almondbury Road was burnt in 2004 and is now classified as good condition bushland where previously it was in excellent condition. Fire impact can be reduced through education and rapid response, as well as post fire management actions.



Figure 11 Tree death caused by fire and/or dieback has depleted much of the good condition area in Wireless Hill of healthy diverse over-storey.



Figure 12



Figure 13

Figures 12 & 13 Degraded areas are located around the perimeter of the Park which are vulnerable to weeds, wind, erosion and human disturbance. This site at lower Hickey Street (right) shows the area is choked with weed – see Figure 12. Mulch dumping and other activities (below) are also contributors to the degradation of this bushland – see Figure 13.

Recommendation;

Regularly update inventories on flora in Wireless Hill and integrate research outcomes into management strategies.

1.8 Threats to the Bushland

Weeds

Wireless Hill was assessed in detail for bushland condition and for the presence of the top 15 weeds in the reserve. GPS was used to produce individual weed maps (see Appendix 5).

1.9 Weeds found in Wireless Hill:

Perennial grasses- including veldt grass, found in over 80% of the main area of the Park

- Annual grasses
- Sandplain Lupin. (*Lupinus cosentinii*)
- *Pelargonium capitatum*
- *Lachenalia reflexa*
- *Gladiolus calophylla*
- *Fumaria* species
- *Carpobrotus edulis*
- *Chamaecytisus plamens*
- *Euphorbia* species
- Flatweed species
- *Arctotheca calendula*
- *Chamelaucium uncinatum*
- *Watsonia* species
- Freesia species

Since the previous management plan, weed management has been undertaken with a focus on grassy, woody and bulbous weeds including Freesia. Weed control in the Park has been constrained by the costs associated with spraying and hand weeding, and has varied considerably over the last 5 years. The Friends of Wireless Hill have undertaken hand removal and some spraying of grassy weeds and bulbous weeds including Gladiolus and Freesia (Pers. comm., Friends of Wireless Hill, 2005).

In 2002 monitoring quadrats were established to determine changes in vegetation association and the success of activities such as veldt grass spraying. This report (Appendix 4) compares vegetation assessments with the survey undertaken for the 1998 Management Plan. The results show a slight improvement of vegetation condition based on Keighery's classification methods over the entire Park, with some associations improving in quality.

There was some reduction in grassy weeds, however the study recommended early spring surveys, when veldt grass is most active, to determine whether spraying is keeping this weed under control.

The Friends of Wireless Hill have undertaken weeding in the park for a number of years with regular weeding days on weekends and individuals weeding on an ad hoc basis throughout the year. In 2007 the Friends agreed with council to undertake hand

weeding in a particular area of the park surrounding the wildflower walk. The City of Melville agreed not to use chemical sprays in this area and to allow the Friends to undertake all of the hand weeding necessary to control weeds in the area (see map below). This area is to be kept at the standard maintained by the City of Melville in other areas of the reserve. The current success rate for weed management expected by the City of Melville is a 95 percent kill rate for the priority weed species.

FOWH Agreed Weed Management Areas



Figure 14 Map of agreed Friends group hand weeding areas

The success of the Friends group hand weeding efforts have not been formally assessed. It is recommended that the Friends weeding program be reviewed annually to determine its success and the extent of the area hand weeded.

Recommendations;

Continue to conduct appropriate weed control programs involving a number of weed management techniques (including help from the Friends Group).

To review annually the Friends of Wireless Hill's weed program and determine the success and extent of area that the group hand weed.

1.10 Disease and Pathogens

Dieback

Dieback is caused by the microbial pathogen *Phytophthora cinnamomi*, which attacks plant roots and prevents water uptake in many species of native and non native plants in Western Australia. This soil-borne organism leads to a dying back and usually to the eventual death of native plants in bushland where it has spread.

A dieback survey was undertaken in Wireless Hill in 2003, and although determining the actual infestation line was difficult due to vegetation clearing, the infestation was mapped and can be found in Appendix 3.

This infestation has caused a multitude of plant deaths in Wireless Hill, including *Banksia*, *Xanthorrhoea* species and Jarrah to the north west of the ring road. This area has been degraded significantly and requires ongoing maintenance to ensure the dieback infection does not spread to other parts of the Park.



Figure 15 The impact of dieback at Wireless Hill Park.

Grass Tree Deaths

In 2005, the Friends of Wireless Hill informed City of Melville staff that the grass trees to the west of Telefunken Drive down to both Davey Street and Barnard Street appeared to be dying, and were definitely suffering from some form of stress, showing yellowing of leaves in some specimens.

The City of Melville met with Chris Dunne from the Dieback Working Group in late 2005 to determine if the damage and stress was caused by the presence of another infestation of *Phytophthora cinnamomi*.

The grass tree deaths and stress were found to be widespread and random, but the cause of this damage was not due to the presence of Dieback in the park. The

problem of grass tree deaths has been reported across the state – research into the problem is ongoing.



Figure 16 A grass tree displaying signs of stress.

Recommendations

Assess, map, and treat Phythopthorra dieback infestations as needed;

Ensure City of Melville staff working in the park are aware of the hygiene requirements in areas affected by dieback;

Ensure FESA adheres to the policy (as outlined in the Bushfire Management Strategy 2007) of remaining on established tracks when fighting fires to minimise the spread of dieback;

Consider more education/interpretation on dieback in Interpretation Management Plan; and

Regularly liaise with other agencies to monitor the latest information and research into grass tree deaths and stress, its causes and possible treatments.

NATIVE AND INTRODUCED FAUNA

1.11 Native Fauna

The park was surveyed for mammalian fauna in 1998. The results indicated that the park did not contain any native mammalian fauna and it was concluded that this was a result of previous vegetation clearing. Native mammals have not been actively reintroduced into the area are unlikely to have arrived of their own volition in such a fragmented landscape.

The woodland vegetation provides valuable habitat for birds. A survey of bird species undertaken in 1998 reported 44 species of birds frequenting Wireless Hill. A survey undertaken in 2004 found only 35 species of birds in the Park however, a number of species were found to be breeding in the park, including the migratory Rainbow bee-eater (*Merops ornatus*) and Striated pardalotes (Gole, 2004).

The complete list can be found in Appendix 8. Other migratory birds are known to occur in Wireless Hill, such as the Shining bronze-cuckoo (*Chrysococcyx lucidus*), White-tailed black cockatoo (*Calyptorhynchus baudinii*), and Red wattlebird (*Anthochaera carunculata*)(1999 Wireless Hill Management Plan). The 2004 survey indicated the majority of these species were fairly common, apart from the White-tailed

black cockatoo (*Calyptorhynchus baudinii*), which is generally confined to dense forests of marri and karri in south western Australia, and is listed as a vulnerable species.



Figure 17 White Cheeked Honeyeater in the Park.

Continued re-vegetation will ensure that more species of birds frequent the Park over time. Installation of temporary nest hollows in the form of bird boxes can provide a solution to the lack of nest hollows in the park.

1.12 Reptiles and amphibians

Although no formal survey of reptiles has been undertaken since the previous Management Plan (see Appendix 10), they are abundant and have been seen in the park on a regular basis.



Figure 18 Bobtail Lizard in the park

Small reptiles such as skinks and legless lizards are common in the *Allocasuarina* leaf litter and Bobtails (*Tiliqua rugosa*) are commonly seen during breeding season and when the young are dispersing in autumn. These animals thrive in open cleared patches in the woodland areas where they can regulate their body temperature on the sand in the sun.

Bushland regeneration of the park will continue to promote the retention and extension of faunal habitat.

Recommendation

Investigate the installation of nest boxes for habitat creation for birds and small mammals.

1.13 Exotic fauna

Introduced fauna can have a devastating impact on native flora and fauna. Impacts include predation, direct competition and habitat destruction.

At one stage in the early 1980's, the European rabbit (*Oryctolagus cuniculus*) was present in large numbers within Wireless Hill Park. Rabbits were almost completely eradicated as a direct result of a programme recommended in the 1985 management plan. It appears that rabbits have not returned to their former numbers since this time.

Occasionally, foxes (*Vulpes vulpes*) are sighted and periodically removed. Foxes are opportunistic feeders and commonly predate on native fauna. Regular monitoring and control of foxes and rabbits should continue if there is evidence of their presence in the park.

1.14 Domestic animals

Domestic animals such as dogs and cats have a significant impact on bushland in urban parks. It has long been acknowledged that cats hunt small lizards, insects and native birds in bushland parks and should be controlled. Owners should be encouraged to keep their pets indoors if they live adjacent to bushland areas.

The presence of domestic dogs in urban bushland has a significant impact on weed spread, and soil disturbance, as well as affecting nesting birds and small animals. Dog faeces can spread weeds, change soil quality and affect native plants sensitive to phosphorus.

The City of Melville stipulates that dogs must be on leads in Wireless Hill at all times, and must stay on paths.

Recommendation

Monitor the presence of feral animals (rabbits, foxes & bees) and control when required.

Maintain signage regarding dog control in bushland areas of the park.

1.15 Fire Management

The bushland in Wireless Hill has had a complex fire history. In the absence of detailed records, it is generally accepted that some prescribed burning has been undertaken in the past on an irregular basis, to reduce fuel loads. This was undertaken prior to the summer months for many years, but ceased well before the 1985 Management Plan. Since this time fires have regularly occurred in the Park as a result of arson or accidental events.

As a result, the Park now exhibits a mosaic of vegetation communities and ages. It is clear that frequent fires have permanently altered the under-storey vegetation, which is now dominated by fire dependant species, including perennial weedy grasses. There is little doubt that best practice fire management and public education may help to reduce the threat of fire. Weed management and regular bushland maintenance is

essential to minimise fuel loads, and thus reduce the risk of hot, uncontrollable burns should a fire be started.

In 2004, the City of Melville removed the dead wood material which was of little or no habitat value from a 15 metre swathe around the perimeter of the Park. This reduced much of the community perception that there was a high fuel load, a fire risk and consequential threat to their safety.

A fire management strategy for Wireless Hill (2005), designed by FESA and reviewed by the City of Melville is provided in Appendix 7. This document attempts to streamline FESA's response to fires and to ensure that the City of Melville is consulted about activities affecting management, such as tree removal and off road access. More recently the City of Melville Bushfire Strategy was reviewed and efforts will be made by the City of Melville to ensure that FESA's Management Plans comply with the bushfire strategy recommendations.

Recommendation

Manage fire risk in the park in accordance with the Bushfire Management Strategy (2007).

Continue to remove dead wood material from 15 metres around the perimeter of the park to reduce fire risk and improve community perception about fire risk in the park.

ACCESS AND TRACK MANAGEMENT

Wireless Hill Park has an extensive network of tracks and paths through the bushland that are well used. Unfortunately there are also a large number of unauthorised tracks that have been created through uncontrolled access and by people taking short cuts. Therefore controlling where and how people access the path network is essential in minimising the damage from further fragmentation.

Rationalisation of the path network by closing down some of the unnecessary paths would be desirable over the longer term. Unless access to the unauthorised /unnecessary paths is closed off people will continue to use a path even if it is blocked off with brush and/or other material. Often a new path will be formed adjacent to the closed off track causing further damage.

Many of the unauthorised tracks have arisen as a result of entry to the park at a number of points around the perimeter. The best way to counter this is to construct a perimeter fence around Wireless Hill to allow access only at authorised points. Once a fence is installed unwanted paths can be effectively closed allowing the natural bushland to re-generate. A perimeter fence would have the added benefit of providing security by limiting entry from vehicles, which occurs on occasions.

The path network is currently comprised of a mix of surfaces including concrete, asphalt, crushed limestone, cinder and sand. There is a program in place to upgrade some of the older and more worn surfaces over the next 5 to 10 years. Paths that should be closed over the course of this management plan are shown in the aerial photograph below.

A further strategy for the promotion of the use of tracks could involve contacting regular users of the park such as bus tour companies and encouraging them to remind patrons to remain on designated paths at all times within the park. The creation of a fee system for commercial operators using the park could have the effect of reinforcing the parks values and encouraging appropriate usage of the park.

Recommendations

Fence the perimeter of the park with a pine pole and appropriate fence to help control access;

Allow unauthorised/unwanted tracks to naturally regenerate once access has been blocked;

Regularly contact bus tour companies to remind them that visitors to the park should be confined along existing paths to protect vegetation and prevent erosion; and

Consider creating a fee system for tour companies using the park for commercial activities on a regular basis.

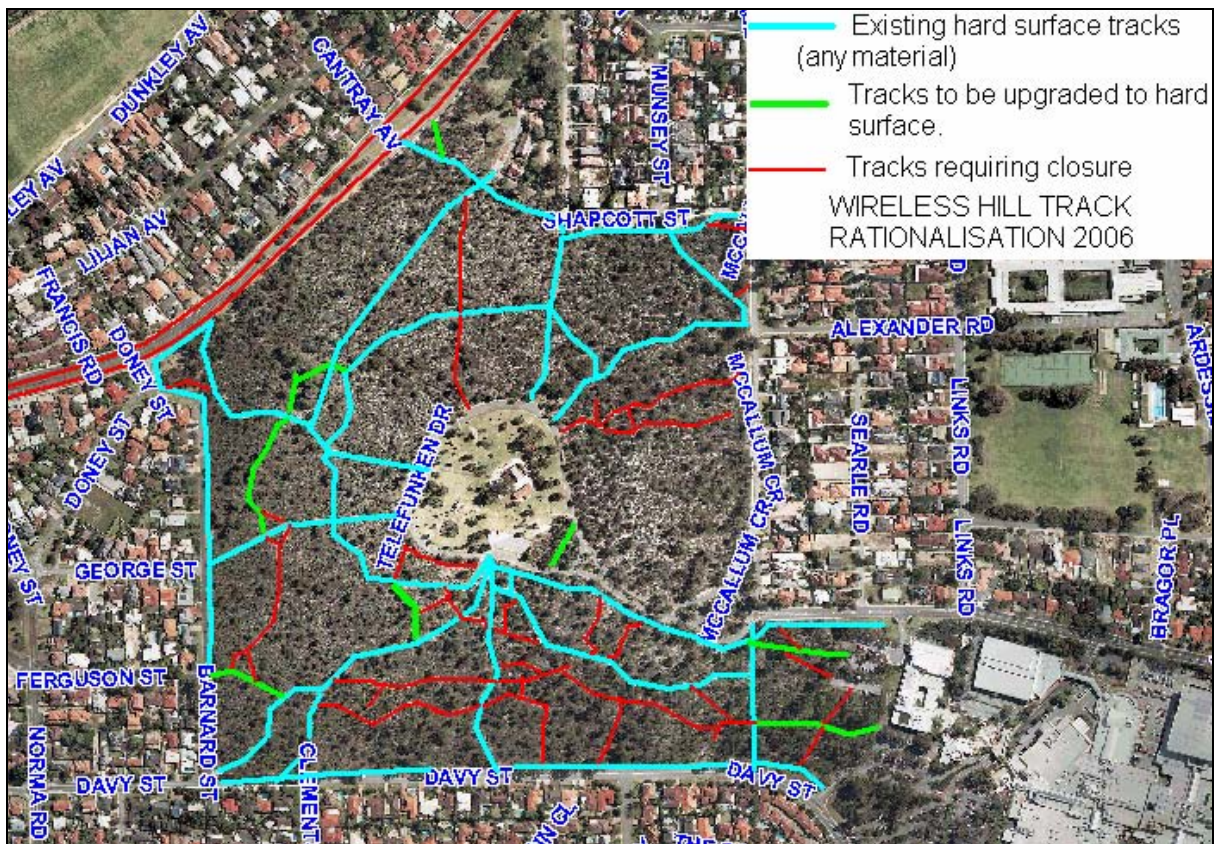


Figure 17 Tracks and paths in Wireless Hill Park.

Tracks have been classified as 'existing hard surface'.

Tracks to be upgraded to a hard surface to provide access in areas where protection of bushland condition is not as critical and the need for a track in this area is evident by current visitor usage.

Tracks to be closed. These tracks are not necessary and encourage weed spread and unnecessary human disturbance in areas which are of high priority for protection (very good to excellent condition rating).

Erosion

Erosion in Wireless Hill is limited to areas where steep slopes, access and loss of vegetation have caused soil instability. Erosion can be counteracted through controlling access on paths, re-vegetating or protecting areas of exposed bare earth, (for example after fire), and by controlling water movement on hard surfaces.

In most instances in Wireless Hill, the erosion is isolated and once the problem is recognised, solutions can quickly be found. For example establishing copper log and chain link structures from the heritage trail in the north to the west corner of Barnard Street in 2004/2005 has limited track erosion. It should be noted that this track is one marked for closure as the sloping nature of the site is not an appropriate location for a track.

Examining the existing hard surfaces in winter and establishing rock spillways may be necessary to counteract some runoff from bitumen paths into bushland on steep slopes. Vigilance and support from the Friends of Wireless Hill in reporting erosion can help reduce these problems.

Recommendations;

Annually review all hard surface tracks in winter to see where erosion is causing vegetation damage.

1.17 Vandalism and Security

Vandalism and security are serious issues for users and managers of the bush and park areas in Wireless Hill. Access to the Park via roads and the proximity of the bushland to the carpark and access points is a significant factor in the frequency of negative social activities occurring there. Activities including arson, graffiti and damage to infrastructure and vegetation are widespread in the park all year round. There have been attempts to control these negative activities through improvements to amenity in the central area, more security patrols and signage. Community education, through activities like the wildflower walk and Friends weeding or planting days may also help to prevent antisocial behaviour.

In 1998, the City of Melville implemented a community liaison/security programme, in an attempt to improve security throughout the city and to take stock of problem areas. Whilst this has had some influence over the antisocial behaviour in the area, improved lighting and the recent installation of the gate system which locks the Park every evening has also helped in combating these activities. The community security service has since reported less call outs to the park and believe that the gate has prevented the majority of people from entering the park when the gate is closed.

Recommendations;

Fence the perimeter of the park with an appropriate fence to help control access; and

Request regular patrols by the Community Security Service to deter vandalism and antisocial behaviour in the park,

ENVIRONMENTAL EDUCATION AND COMMUNITY INVOLVEMENT

1.18 The Friends of Wireless Hill

The Friends of Wireless Hill group was formed following the completion of the 1985 Management Plan to actively involve the community in rehabilitating the Park. This group of volunteers have greatly contributed to re-vegetation and weed removal. Initially, the level of community involvement was high, but over the years the level of membership and general interest subsided. At the time the 1999 Management Plan was written the Friends group was not functioning, but reformed in 2000, with support from council, to help improve the area and provide a community voice.

The Friends of Wireless Hill are members of the local community who are dedicated to protecting the Park. The Friends meet on a monthly basis to discuss concerns and plan their activities. The Friends undertake regular weeding activities in the Park, often as individuals, but sometimes as regular teams, and have also undertaken large plantings in winter to help re-vegetation. Successful projects in recent years include the hand removal of infestations of woody weeds including Geraldton Wax, the re-vegetation of some paths to the North West, and swift reporting of fire events occurring in the Park. Activities of an educational nature, including guided wildflower walks, photo recording, monitoring of weed control, seed collection and dieback projects have also been undertaken by the group.

The Friends play an important role in assisting the City of Melville staff to manage Wireless Hill Park, particularly in alerting staff to problems including vandalism, fire, erosion, feral animals and diseased plants. Section 2.4 outlines the Friends groups contribution to the weed program in the reserve. The City of Melville will continue to support the Friends of Wireless Hill through attendance at key meetings, planning advice and regular communication.

1.19 The Wider Community

The park is a wonderful resource for providing local groups and the wider community, including schools, with the opportunity to appreciate native bushland and learn about the environment of the area. Interpretive signage is an effective management tool, and plays a large role in environmental education. It enables visitors to learn about the environment whilst passively enjoying the area and helps to achieve an overall sense of understanding. Current signage in Wireless Hill varies from dog and directional signs, to interpretation signs for the wildflower walk. All signage will be reviewed and plans for upgrading made in the upcoming Interpretation Plan for Wireless Hill Park.

Recommendations

Work with the Friends of Wireless Hill to improve communication for example by attending key friends group meetings and making site visits to plan future restoration works;

Provide opportunities for education and training in Bushland Management techniques for the Friends of Wireless Hill;

Support activities such as the guided Wildflower Walk; and

Provide opportunities and support for funding applications for the friends group as they arise.

BUDGETARY REQUIREMENTS

TABLE 3: - OPERATING BUDGET

Recommended Actions	08/09	09/10	10/11	11/12	12/13	Notes
<u>Grasses</u> (Annual and perennial):						
1 Control perennial grasses in areas of excellent condition bushland and in fire area off Davey Street as a first priority, to prevent weeds from infesting the adjacent excellent condition bushland.	\$15,000	\$15,750	\$16, 538	\$17,365	\$18,234	
2 Establish monitoring quadrats in both the sprayed and unsprayed areas and survey them twice yearly: late spring/early summer and late autumn/early winter.	In house costs	In house costs	In house costs	In house costs	In house costs	Seek assistance from Friends group

Recommended Actions	08/09	09/10	10/11	11/12	12/13	Notes
3 Treat and remove bulbous weeds in the excellent and very good areas of the park <ul style="list-style-type: none"> • Gladioli • <i>Fumaria</i> • <i>Euphorbia</i> • Freesias • <i>Lachenalia</i> • Lupins • Flatweed • <i>Watsonia</i> • <i>Pelargonium</i> • <i>Arctotheca</i> • <i>Cahemlaucium</i> • <i>Carpobrotus</i> • <i>Chamaecytisus</i> 	\$5000	\$5000	\$5000	\$5000	\$5000	Combination of spot spraying and hand removal Seek assistance from Friends Group

Recommended Actions	08/09	09/10	10/11	11/12	12/13	Notes
<u>General Bushland Maintenance</u> <ul style="list-style-type: none"> Removal of broken branches and hazards Spot weed removal Hazardous tree maintenance Dieback assessment Fire Safety – removal of dry grass fuel (slashing) Cleanliness – removal of litter, dog faeces, grass clippings or greenwaste Erosion Vandalism Safety 	\$30,000	\$30,000	\$30,000	\$30,000	\$30,000	
4 Ensure City of Melville staff working in the park are aware of the hygiene requirements in areas affected by dieback	In house annually	In house annually	In house annually	In house annually	In house annually	Environmental Officer to liaise with COM staff
5 Ensure FESA adheres to the policy(as outlined in the Bushfire Management Strategy 2007) of remaining on established tracks when fighting fires to minimise the spread of dieback	In house annually	In house annually	In house annually	In house annually	In house annually	Environmental Officer to liaise with FESA and update fire management plans etc

Recommended Actions	08/09	09/10	10/11	11/12	12/13	Notes
6 Consider more education/interpretation on dieback in the upcoming Interpretation Management Plan for the park	As part of management plan					Environmental Officer to formulate education/interpretation material as part of management plan
7 Consult relevant staff at King's Park quarterly to stay informed about grass tree stress and its causes and treatments.	In house costs quarterly	In house costs quarterly	In house costs quarterly	In house costs quarterly	In house costs quarterly	Environmental Officer to liaise with King's Park staff
9 Monitor the presence of feral animals (rabbits, foxes, bees) and control if present	\$500 per incident if required	\$500 per incident if required	\$500 per incident if required	\$500 per incident if required	\$500 per incident if required	Contractor to trap animals/rip dens if required Bee control as per COM's bee control strategy Seek assistance from Friends group in monitoring
11 Undertake Fire Management as per Bushfire management plan for the City of Melville	In house annually					Environmental Officer to liaise with FESA and update fire management plans etc
13 Allow unauthorised /unwanted tracks to naturally regenerate once access has been blocked	In house					Environmental Officer to liaise with bush crew on blocking access
14 Contact bus tour companies annually to remind them visitors to the Park should be confined along existing paths to protect vegetation and prevent erosion.	In house annually in early September					Mail letter to companies identified by Friends group, follow up with phone call for companies reported to allow tourists off paths

Recommended Actions	08/09	09/10	10/11	11/12	12/13	Notes
15 Consider creating a fee system for tour companies using the park for commercial activities on a regular basis	In house as part of overall Wireless Hill vision planning					Environmental Officer to liaise with visioning planners
16 Annually review all hard surface tracks in winter to see where erosion is causing vegetation damage.	In house costs	In house costs	In house costs	In house costs	In house costs	Environmental Officer to organise timely remediation.
18 Encourage reporting of erosion issues by Friends Group members.	In house costs	In house costs	In house costs	In house costs	In house costs	Environmental Officer to organise timely remediation.
20 Request regular patrols by the Community Security Service to deter vandalism and antisocial behaviour in the park	In house	In house costs	In house costs	In house costs	In house costs	Environmental Officer to liaise with Community Security Service
21 Continue to provide opportunities for community education/appreciation of the Park through supporting Friends activities and providing signage.	\$800	\$800	\$800	\$800	\$800	Support for advertising events in local papers, BBQs on working days, other Friends initiatives
22 Work with the Friends of Wireless Hill to improve communication, through attending key Friends meetings and meeting to discuss particular issues when needed.	In house costs	In house costs	In house costs	In house costs	In house costs	

Recommended Actions	08/09	09/10	10/11	11/12	12/13	Notes
23 Create opportunities for education and training in Bushland Management issues for the Friends of Wireless Hill	In house costs	In house costs	In house costs	In house costs	In house costs	
24 Support activities such as the Wildflower Walk	In house costs	In house costs	In house costs	In house costs	In house costs	
25 Provide opportunities and support for funding applications for the friends group as they arise	In house costs	In house costs	In house costs	In house costs	In house costs	
TOTAL OPERATING BUDGET:	\$51,300	\$52,050	\$52,838	\$53,665	\$54,534	

TABLE 4: - CAPITAL WORKS BUDGET

Task	2008/09	2009/10	2010/11	2011/12	2012/2013
Resurvey all flora	\$6000				
Resurvey weeds to produce weed & vegetation condition maps				\$6000	
Map the extent and treat any <i>Phytophthora</i> dieback infestations		2,500 to map		\$2500 map \$5,500 treat	
Install nest boxes	\$1500			\$1500	
Regularly maintain/replace signs in the park. (esp dog signs)	\$1500	\$1500	\$1500	\$1500	\$1500
Fox/rabbit/bee control (if required)	\$1200	\$1600	\$1200	\$1200	\$1500
Remove dead woody material 15 m from the perimeter(fire management plan)		5000			\$5000
Fence Wireless Hill	85,000				
Erosion – copper log and chain steps for steep areas			\$6000		
Review tracks and maintain if necessary	\$2000			\$2000	
Total Budget	\$97,200	\$10,600	\$8,700	\$20,200	\$8,000

TOTAL CAPITAL WORKS BUDGET \$144,700

SECTION 3 - REFERENCES

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