

ERN STAPLETON RESERVE



2003 DRAFT MANAGEMENT PLAN



— City of —
Melville

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INTRODUCTION

Summary

The plan addresses the management of Ern Stapleton Reserve, one of three remnant bushland areas in the locality of Attadale. Ern Stapleton is managed by the City of Melville for the purposes of environmental conservation of flora and fauna.

Due to the pressures associated with urbanisation, the condition of the bushland at Ern Stapleton has deteriorated over recent years. Weed invasion, dumping of household or garden refuse and trampling are the major issues that have led to decline in the condition of the bushland.

The overall goal of this plan is to maintain and restore the ecological functions of the Reserve while increasing the level of community involvement and awareness. The plan also aims to minimise possible ecological impact of recreational use by local residents, whilst still acknowledging the importance of local parks for community recreation and social activities.

The plan is to be implemented over a five-year period. Emphasis will be placed on the Bushland environment, Infrastructure and Maintenance, Community use/Involvement and Implementation of the plan.

The following recommendations are included for the future management of Ern Stapleton Reserve.

RECOMMENDATIONS:

General

- **Rezone Ern Stapleton reserve in the Town Planning Scheme to Conservation.**

Flora

- **A plant species list for the reserve should be compiled and updated regularly.**
- **A seed bank is established from seed collected within the park or other sources within the Attadale area, for regeneration purposes.**
- **That seed, preferably local, is used to replant and revegetate this reserve with both understorey and overstorey species, in order to prevent vegetation loss and increased weed spread in Ern Stapleton.**
- **Ongoing monitoring be carried out to observe any changes in the health of the flora over time, and the subsequent viability of seeds harvested from vegetation in Ern Stapleton.**

Fauna

- **That 5-7 nesting boxes are installed throughout the reserve to encourage the breeding of various bird species.**
- **That local residents are educated on the detrimental effects that domestic animals have on natural ecosystems and advised on appropriate methods to reduce the risk of predation of native fauna.**
- **That dogs be controlled on leads at all times within the park.**

Monitoring and research

- **That a simple quadrat system is developed to monitor the effect of any weed control or direct seeding activities on natural vegetation.**
- **That the habitats of fauna in the reserve are examined to ensure that restoration activities do not adversely affect any fauna.**

Fire

- A fire record is kept of any fire that occurs in the reserve.
- A manual fuel removal program is developed to eliminate the intensity of an accidental or deliberately lit fire. Flash fuels, such as grassy weeds and large amounts of leaf litter, should be removed and or reduced to decrease the fire risk. Fuel removal should not impact on the habitat of fauna in the reserve, nor damage native vegetation.
- That an education program be established to help inform the community about bush fires, safety and environmental protection.

Weeds

- That a weed map is compiled detailing the distribution of major weeds throughout the reserve.
- On completion of the weed map a strategic weed control program is to be developed and implemented.
- That this weed map be reviewed following the completion of the 5 year plan.

Existing and proposed infrastructure

- Upgrade existing signage to promote appropriate activities within the reserve.
- That a bin be provided in conjunction with dog litter bags on at least one of the main pathways leading into the reserve.
- Maintain the existing concrete paths at an acceptable standard and discourage the formation of new paths, which may interfere with natural vegetation.

Aesthetics

- Litter is collected from the reserve on a regular basis.
- That the grass verge is mown on a regular basis or alternatively sprayed and replaced with mulch to reduce upkeep.
- That mulch, wherever present, is maintained weed free on a regular basis.

Access

- That mulching the perimeter verges of the Park be considered.

Community involvement

- That the City of Melville continues to promote and educate the community to increase awareness about urban bushland.

Education and promotion

- Encourage the participation of local schools and community members in conservation activities.
- Install interpretive signage to inform reserve visitors of problems facing the bushland as well as the positive features and importance of the bushlands ecosystem.

RESOURCE INVENTORY

SIZE AND LAND TENURE

Ern Stapleton Reserve is Reserve No. 24063 and is bound by Daniel St and Luff Crescent in the suburb of Attadale.

The reserve is zoned as local open space and is 0.718ha. It is vested with the City of Melville. Under the Town Planning Scheme, it is zoned for Recreation. As such a large percentage of the reserve is bushland, rezoning this to Conservation would provide increased protection.

While the reserve is relatively small in size it can be considered locally significant as it provides refuge for local flora and fauna as well as a place of passive recreation for local residents. An aerial photo of Ern Stapleton is pictured below in Figure 1.

Recommendations:

- **Rezone Ern Stapleton reserve in the Town Planning Scheme to Conservation.**

Figure 1- Aerial photo of Ern Stapleton Reserve.



BUSHLAND ENVIRONMENT

SOIL AND GEOLOGY

Ern Stapleton reserve is situated upon the Spearwood dune system. The Spearwood dune system runs parallel to the coast and has originated from the leaching of Tamala limestone deposited in the late Pleistocene era.

Two soil types occur on these dunes, the Cottesloe soils, which are characterised, by shallow yellow/brown soils and rocky limestone outcrops. The other soil type is the Karrakatta, which is characterised by deep pale yellow/brown sands over limestone. The soil of Ern Stapleton is that of the Karrakatta type.

FLORA

The vegetation of Ern Stapleton is typical of Karrakatta soils. The Vegetation type is best described as open Jarrah, Marri - Banksia woodland.

The Jarrah's (*Eucalyptus marginata*) and Marri's (*Corymbia calophylla*) dominate the over story with *Banksia attenuata*, *Banksia menziesii*, *Jacksonia furcellata* and *Jacksonia sternbergiana* providing a prominent middle story.

Shrubs such as *Hibbertia hypericoides*, *Dasypogon bromeliifolius*, *Stirlingia latifolia*, *Conostylis candicans* and *aculeata*, *Gompholobium tomentosum*, *Macrozamia riedlei* and *Xanthorrhoea preisii* dominate the understorey. A species list for the reserve should be compiled regularly to see changes in the reserve over time.

Some notable *Banksia* deaths have occurred throughout the reserve, but the cause of these is unknown. Most likely the *Banksias* are senescing, as they are over 60 years old.

Preliminary studies in nearby reserves suggest it is unlikely that the reserve contains any *Phytophthora cinnamomi* or other pathogens. PC is not common on Karrakatta soils types and plant deaths are more likely caused by old age. The overall health of the vegetation is otherwise good.

The major threat to the flora of the reserve is isolation of the vegetation from other bushland, increase in impact of weeds, loss of vegetation through fire, weeds and rubbish dumping.

Ern Stapleton has a low rate of natural regeneration. The bushland is established and many of the species are old and do not produce much viable seed. Because of the major influence of weeds entering the reserve from verges, garden escapes, dumping and wind, open areas are quickly propagated by vigorous growing weeds which often outcompete the native plants. It is therefore necessary to replace the degrading bushland manually, through planting days and trailing direct seeding as a means of regeneration. These activities will, over time, ensure that the bushland is restored with local species.

Recommendations:

- **A species list for the reserve should be compiled and updated regularly.**
- **A seed bank is established from seed collected within the park or other sources within the Attadale area, for regeneration purposes.**
- **That seed, preferably local, is used to replant and revegetate this reserve with both understorey and overstorey species, in order to prevent vegetation loss and increased weed spread in Ern Stapleton.**
- **Monitoring is to be carried out to observe any changes in the health of the flora over time, and the subsequent viability of seeds harvested from vegetation in Ern Stapleton.**
- **An education program is commenced to help reduce vandalism in the form fire, dumping and vegetation damage.**

FAUNA

Remnant bushland areas such as Ern Stapleton Reserve provide an island of habitat for native fauna. It is likely that the reserve has a small population of native reptiles and invertebrates, as well as serving as a 'greenlink' for more mobile species such as birds, moving from areas nearby such as the Swan River and Blackwall Reach.

Some mature trees existing in the reserve provide significant habitat for the bird life of Ern Stapleton. These mature trees would be suitable places to install nesting boxes, thus increasing the potential number of birds able to nest in the reserve.

Domestic animals such as cats and dogs are common in this reserve. It is an established fact that domestic animals predate fauna in urban bushland and should be discouraged from roaming the reserve off leads or without suitable control.

Recommendations:

- **That several nesting boxes are installed throughout the reserve to encourage the breeding of various bird species.**
- **Local residents are educated of the detrimental effects that domestic animals have on natural ecosystems and advised on appropriate methods to reduce the risk of predation of native fauna.**

- **Dogs should be controlled on a lead at all times within the reserve.**

MONITORING AND RESEARCH

As with all environmental restoration activities, monitoring and research are equally important in managing ecological systems. Monitoring quadrats are an effective method of examining the effectiveness of bushland regeneration.

Research can always be beneficial in determining the latest developments in direct seeding and weed control techniques. Knowledge on the specific habitats and food sources of fauna that inhabit the reserve may also be beneficial to the management strategies that are put into practice.

Recommendations:

- **That a simple quadrat system is developed to monitor the effect of weed control, direct seeding and planting activities within the reserve.**
- **That habitat in the reserve is monitored to ensure that restoration activities do not adversely affect any fauna.**

INFRASTRUCTURE AND MAINTENANCE

FIRE

Fire, especially frequent or intense fire, often has a devastating effect on the flora and fauna of urban bushland. No current records are available on the history of fire in the reserve, however it appears that this area has not been burnt for over 15 years. Like many other bushland remnants, fire is usually a result of accidental ignition or arson. A bushfire management strategy was developed in 1995 for the City of Melville and addresses the wildfire prevention methods for the bushland remnants around the City.

The City of Melville Health Policy No.4 prohibits the burning of vegetation except where written approval is issued by the council. The policy was implemented to address the issue of nuisance smoke. Due to the habitat and aesthetic value of small bushland remnants such as Ern Stapleton and taking into account Health Policy No.4, this plan recommends manual fuel removal in favour of prescribed burning, as well as ongoing rigorous maintenance and future vigilance through both the council and visitors.

The roads surrounding the reserve act as a sufficient firebreak for residential dwellings and the grass verge also helps to reduce the fire risk to houses. A reduction in weeds such as veld grass and wild oats will help to limit flash fuels. Spraying and or manual removal will ensure that the possibility of the bush burning is reduced.

Recommendations:

- **A fire record is kept of any fire that occurs in the reserve.**
- **Flash fuels, such as grassy weeds and large amounts of leaf litter, should be removed and or reduced to reduce the fire risk, as part of a manual fuel removal program. Fuel removal should not impact on the habitat of fauna in the reserve nor damage native vegetation.**
- **An education program is encouraged to prevent fires and to watch for evidence of fire with both council and the community.**

WEEDS

Weeds are widely considered one of the greatest threats to biodiversity in remnant bushland. Weeds compete with native vegetation displacing the more delicate plants such as orchids and herbaceous perennials and eventually threatening the more hardy native species.

Ern Stapleton Reserve is inundated with a number of common weeds, which have significantly damaged the native biodiversity of the area.

An informal weed survey was completed by Stansfield in 2003. The major weeds found in the area are:

- *Erharta calycina* (Veldt Grass)
- Bridle Creeper (*Asparagus asparagoides*)
- *Lachenalia reflexa* (Soldier boy's)
- *Fumaria capreolata* and *muralis* (Fumaria)
- *Cynodon dactylon* (Common couch)
- *Freesia* spp. (Freesia)
- *Pelargonium capitatum* (Rose Pelargonium)
- *Euphorbia terracina* (Geraldton carnation weed)

All of the above weeds are highly competitive and invasive. A systematic approach should be adopted in order to successfully control such environmental weeds and improve the condition of vegetation coverage. A weed control schedule is included in the implementation section of this plan.

Recommendations:

- **That a weed map is compiled detailing the distribution of major weeds throughout the reserve.**
- **On completion of the weed map a strategic weed control program is to be developed and implemented.**
- **That this weed map be reviewed following the completion of the 5 year plan.**

EXISTING AND PROPOSED INFRASTRUCTURE

Ern Stapleton currently has limited infrastructure. Since the reserve is so small, large amounts of unnatural materials would greatly detract from the bushland environment. Reserve signs need to be replaced to better inform users that the bushland is a valued asset within Melville. New signage with an educational message would be beneficial to increase the level of community awareness among local residents about issues concerning the bushland of Ern Stapleton Reserve, and to encourage a sense of ownership "stewardship".

The major paths in the reserve are currently laid with concrete pavers. Although this may aesthetically detract from the reserve, the paths are well maintained and neat. The concrete, to a large extent, also prevents degradation of the bushland off the tracks and only contributes a little to weed spread. Maintenance of these paths, therefore, is an important way to maintain the ecological integrity of the bushland.

Provision of a bin at one end of the park may help encourage visitors to clean up after their pets and for other users of the park to thoughtfully dispose of their litter.

Recommendations:

- **Upgrade existing signage to promote appropriate activities within the reserve.**
- **That a bin be provided in conjunction with dog litter bags at least one of the main pathways leading into the reserve.**
- **Maintain the existing concrete paths at an acceptable standard and discourage any informal new paths, which may interfere with natural vegetation.**

AESTHETICS

A high level visual amenity is provided to local residents by the bushland of Ern Stapleton Reserve. The presence of urban bush land is often what attracts people to live in such an area. It is important therefore that the bushland is kept free of litter and the grassed verge is maintained at an acceptable level or alternatively replaced with mulch.

Recommendations:

- **Litter is collected from the reserve on a regular basis.**
- **That the grass verge is mown on a regular basis or alternatively sprayed and replaced with mulch to reduce upkeep.**

COMMUNITY USE

HISTORY

The traditional inhabitants of the Melville area were known as the Beeliiar people who occupied the area of the Swan Coastal Plain from the Swan and Canning Rivers to the north, the Darling Range to the east, Mangles Bay to the south and the Indian Ocean to the west.

The Melville area was considered to be a rich hunting ground for the Beeliiar people who frequented the area. There is no formal record of any aboriginal site or activity at the locality of Ern Stapleton, however it is likely that the area in general would have been utilised for hunting and gathering purposes for a number of years.

The development of Attadale commenced with the first subdivision going on sale in 1896.

The area remained fairly free of development until 1956 when the developers crossed Moreing and Whichmann Roads heading east.

Today, with the exception of the Attadale foreshore, three remnant bushland reserves and three developed parklands, the suburb of Attadale has been entirely developed.

Ern Stapleton was named after a councillor who served the City of Melville for a number of years.

COMMUNITY INVOLVEMENT

To date, Ern Stapleton has had little community involvement. Local Friends groups from other reserves in Attadale have undertaken small tasks on site, such as weeding and rubbish collection.

The local primary school, Mel Maria Catholic Primary, has visited the reserve to observe birds and other wildlife. Following discussions with local Friends groups and the school, Mel Maria has agreed to 'adopt' the park and to incorporate activities in the park into the school curriculum. It is hoped that this relationship will grow over time and the reserve benefits from the positive education and attention.

Recommendation:

- **That the City of Melville continues to foster local groups and nearby schools to increase the level of community awareness about urban bushland and to enhance the bushland of Ern Stapleton.**

ACCESS

Access to Ern Stapleton is from all sides around its perimeter, as the park is bounded on all sides by a grassy verge and roads. Existing paths are concrete and well established. New informal paths are discouraged by the clearly defined concrete. Ongoing maintenance should be maintained to prevent informal paths forming with increased visitation.

An ongoing problem on the edge of the reserve is the dumping of garden, household and building refuse. Increased community education through signage and letter drops may help to reduce this problem.

Recommendations:

- **That mulching the perimeter verges of the Park be considered.**

EDUCATION AND PROMOTION

Urban bushland faces many problems that are often poorly understood by the community. In order to educate the community on issues affecting the reserve, a number of steps may be taken to ensure that the community is informed and supports activities taking place within the reserve. These activities will help to foster a good community spirit and reduce problems associated with vandalism, rubbish dumping and other problematic activities in the area.

Recommendations:

- **Encouraging the participation of local schools and community members in conservation activities.**
- **Install interpretive signage to inform users of the reserve of problems facing the bushland as well as the positive features of the bushland ecosystem.**

IMPLEMENTATION

PRIORITISATION

The numbers of recommendations included in this plan require implementation in order of priority.

The order of priorities will be based upon the recommendations most relevant to the problems of higher importance. The aim will be to initially incorporate a mix of maintenance and capital works to achieve some of the priority recommendations.

FIVE YEAR PLAN

The following recommendations have been included over the five-year period of this management plan in order of importance. Some of the recommendations will require ongoing attention and therefore have been included in consecutive years of the implementation plan.

YEAR 1

- That a weed map is compiled detailing the distribution of major weeds throughout the reserve.
- A strategic weed control program is developed and implemented
- A plant species list is compiled and updated regularly.
- A seed bank is established from seed collected within the park or other sources within the Attadale area.
- That a bin be provided in conjunction with dog litter bags at least one of the main pathways leading into the reserve.
- Encouraging the participation of local schools and community members in conservation activities.
- That interpretive signage is installed.
- A manual fuel removal program is developed to eliminate the intensity of an accidental or deliberately lit fire. Fuel removal should not impact on the habitat of fauna in the reserve or significantly impact on the flora of the reserve.

YEAR 2

- That a simple quadrat system is developed to monitor the effect of any weed control or direct seeding activities on natural vegetation.
- That seed, preferably local, is used to replant and revegetate this reserve with both understorey and overstorey species in order to prevent vegetation loss and increased weed spread in Ern Stapleton.
- That several nesting boxes are installed throughout the reserve to encourage the breeding of various bird species.
- Establish an education program to help inform the community about bushfires, safety and environmental protection.

YEAR 3

- Continuation of year 1 and 2 where appropriate.

YEAR 4

- Upgrade of existing signage stating the name of the reserve.
- Install interpretive signage to inform users of the reserve of problems facing the bushland as well as the positive features and importance of the bushlands ecosystem.

YEAR 5

- That a review of this management plan and completion of its tasks is undertaken to see new ways to manage Ern Stapleton.

ONGOING

- Ongoing weed control strategy. This strategy is to be based on the weed map compiled in year one of this plan's implementation.
- That seed, preferably local, is used to replant and revegetate this reserve with both understorey and overstorey species, in order to prevent vegetation loss and increased weed spread in Ern Stapleton.
- Local residents are educated of the detrimental effects that domestic animals have on natural ecosystems and advised on appropriate methods to reduce the risk of predation of native fauna. This objective may be achieved by including such information on an interpretive sign or by carrying out a leaflet drop to local residents.
- That dogs remain on leads at all times within the park wherever possible.
- Ongoing monitoring should be carried out to observe any changes in the health of the flora over time and the subsequent viability of seeds harvested from vegetation in Ern Stapleton.
- That the habitats of fauna in the reserve are examined to ensure that restoration activities do not adversely affect any fauna.
- A fire record is kept of any fire that occurs in the reserve.
- Encouraging the participation of local schools and community members in conservation activities.
- Maintain the existing concrete paths at an acceptable standard and discourage the formation of new informal paths, which may interfere with natural vegetation.
- Litter is collected from the reserve on a regular basis.
- That the grass verge is mown on a regular basis or alternatively, is sprayed and replaced with mulch to reduce upkeep.
- That mulch, wherever present, is frequently weeded and maintained.

PERFORMANCE INDICATORS / MONITORING

The performance indicators for many of the recommendations included in this management plan are simply a case of completing the work if of a capital nature.

Other recommendations included require a more scientific approach in order to adequately monitor effectiveness of weed control or direct seeding. It is recommended that small quadrats be set up to assess the effect of bush regeneration efforts over time. These monitoring quadrats may also be used as a basis for photo points to provide a visual image to correspond with data in a monitoring quadrat.

Another performance indicator to assess the effectiveness of weed management over the five year implementation period of this plan may be to re-map weed distribution two years after the adoption of this plan and again toward the end of the five year period. This exercise will assist council staff in modifying weed management strategies or adopting other methods of weed control.

FINANCIAL IMPLICATIONS

OPERATING EXPENDITURE

	2002/03	2003/04	2005/06	2007/08	2008/09
Maintenance	3240	3240	3240	3240	3240
Weed control	2400	2400	2400	2500	2500
TOTAL	5640	5640	5640	5740	5740

CAPITAL EXPENDITURE

	2002/03	2003/04	2005/06	2007/08	2008/09
Monitoring and Weed mapping	500		500		500
Seed bank/storage etc	1000	1000	500		
Revegetation activities (Planting)	0	1200	1200	1200	1200
Signage	1000			1000	
Bird nesting boxes	0	910			
Review of plan					1000
TOTAL	2500	3110	2200	1200	2700

FUNDING IDEAS

Funding for the implementation of this management plan should primarily come from the City of Melville. There is however scope to receive funding from other sources, as they become available.

Funding is often available for community groups from organisations such as the Gordon Reid foundation, other grant sources can be obtained through Ian Potter Foundation, state grants, Lotteries Commission, etc.

It would be beneficial for City of Melville staff to research and pursue various other funding opportunities if or when they arise.

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