



165 - 195 O'Herns Road, Epping:  
Woodland Reserve Management Plan

Prepared for Alliance Business Park Pty Ltd

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## Biosis offices

### NEW SOUTH WALES

#### Albury

Phone: (02) 6069 9200  
Email: [albury@biosis.com.au](mailto:albury@biosis.com.au)

#### Newcastle

Phone: (02) 4911 4040  
Email: [newcastle@biosis.com.au](mailto:newcastle@biosis.com.au)

#### Sydney

Phone: (02) 9101 8700  
Email: [sydney@biosis.com.au](mailto:sydney@biosis.com.au)

#### Wollongong

Phone: (02) 4201 1090  
Email: [wollongong@biosis.com.au](mailto:wollongong@biosis.com.au)

### VICTORIA

#### Ballarat

Phone: (03) 5304 4250  
Email: [ballarat@biosis.com.au](mailto:ballarat@biosis.com.au)

#### Melbourne (Head Office)

Phone: (03) 8686 4800  
Email: [melbourne@biosis.com.au](mailto:melbourne@biosis.com.au)

#### Wangaratta

Phone: (03) 5718 6900  
Email: [wangaratta@biosis.com.au](mailto:wangaratta@biosis.com.au)

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Prepared by: Steve Mueck

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## Summary

Biosis Pty Ltd was commissioned by MAB Corporation (MAB) to prepare a Management Plan for the woodland reserve identified within the concept design for the eastern extension of Alliance Business Park at 165 - 195 O'Herns Road, Epping. The woodland reserve is proposed to be surrounded by an industrial estate.

The priority for the management of this Woodland Reserve will be to protect and enhance this remnant of Plains Grassy Woodland and maintain its habitat suitability for Golden Sun Moth *Synemon plana*.

This plan documents the actions that Alliance Business Park has committed to undertake to ensure this retained area of woodland retains and improves its habitat and biodiversity values and incorporates the following principles:

- The Woodland Reserve will be protected by an appropriate on-title agreement.
- Protection of the Woodland Reserve during the construction phase of the development.
- Ongoing management of habitat within the Woodland Reserve to maintain and improve its value as habitat for Golden Sun Moth.

Alliance Business Park is responsible for implementing the actions outlined in this plan until management of the Woodland Reserve is handed over to the relevant responsible authority (expected to be Whittlesea Council). Implementation of the actions outlined in this plan will then become the responsibility of the new land owner. This plan will be implemented over a 10 year period but the requirement to manage this corridor to provide suitable habitat for Golden Sun Moth is permanent. The plan should be reviewed every 2 years.

# 1. Introduction

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## 1.1 Project background

Biosis Pty Ltd was commissioned by MAB Corporation to prepare a Woodland Reserve Management Plan (WRMP) for the remnant of Ecological Vegetation Class (EVC) Plains Grassy Woodland (EVC 55) identified for retention within the approved concept plan for the eastern extension of Alliance Business Park into 165 - 195 O'Herns Road, Epping (Figure 1). The broader property covers 31.5 ha and is proposed for industrial development. However, a 1 ha Woodland Reserve is proposed to be retained within the subdivision to protect an area of significant vegetation which also provides about 0.7 ha of habitat for Golden Sun Moth *Synemon plana* (Figure 2).

The site supports a Matter of National Environmental Significance (MNES) protected under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) that being a population of Golden Sun Moth (GSM). It could also serve as a recipient site for a small population of Matted Flax-lily *Dianella amoena* salvaged from the broader subdivision as part of an approved salvage and translocation plan (Biosis 2017a). The biodiversity values of the site are documented in Biosis (2017b).

Due to the presence of MNES on the site, the proposed subdivision was referred to the Australian Minister for the Environment to determine if approval was required under the EPBC Act (Referral 2017/7930). The proposal was deemed by the Department of Environment and Energy (DoEE) to be a controlled action and one of the requirements for the project approval was the preparation of an offset plan for GSM to compensate for the areas of habitat for this species lost as part of the proposed development. The state Department of Environment, Land, Water and Planning (DELWP) also included a condition within the planning permit for the subdivision as follows:

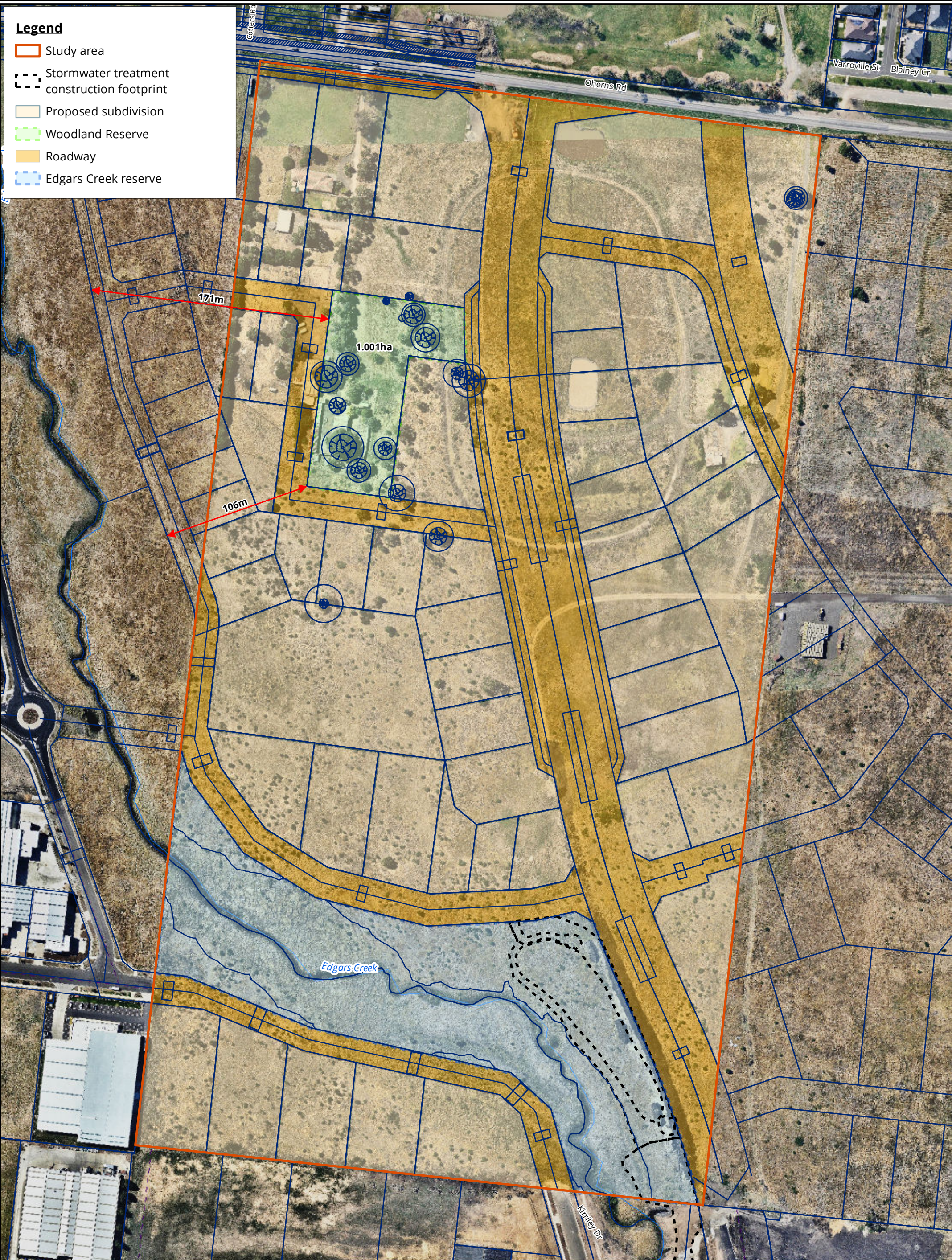
*A Woodland Reserve Management Plan must be prepared to the satisfaction of the Department of Environment, Land, Water and Planning that includes the revegetation and protection of threatened species and communities identified within the site. When approved the Plan will be endorsed by the Responsible Authority and form part of this planning permit.*

This plan encompasses the requirements of both DELWP (defined in the planning permit) and DoEE (based on requirements to protect and maintain MNES retained on site).

## 1.2 Scope

This plan deals with the management of the Woodland Reserve, primarily to maintain its value as habitat for GSM and to protect and enhance the area of Plains Grassy Woodland protected within the boundaries of the reserve. It also deals with the management of these values in the context of construction activities associated with the development outside the Woodland Reserve as these have the potential to impact on the values within the reserve itself. The plan also specifies actions to control weeds within the Woodland Reserve and to revegetate using plant species found in the broader area and otherwise associated with remnants of Plains Grassy Woodland (Figure 1).

The area directly covered by CMP is shown in Figure 1.



### 1.3 Objectives

The objectives of this plan are to identify the necessary management actions which will:

- Protect the value of the Woodland Reserve as native vegetation and habitat for GSM during construction.
- Allow for the long-term maintenance of the Woodland Reserve as habitat for GSM, by ensuring that suitable understorey species persist within the reserve and biomass levels remain appropriate for the structural requirements of this critically endangered species.
- Improve habitat values within the Woodland Reserve to benefit GSM.
- Protect and maintain other biodiversity values including habitat for threatened flora (i.e. Matted Flax-lily *Dianella amoena*) and vegetation communities (i.e. Plains Grassy Woodland).

Note however, that the woodland reserve will not function as a formal recipient site for the translocation of Matted Flax-lily *Dianella amoena* to be salvaged from within the broader Alliance Business Park.

### 1.4 Timeframe and implementation

This plan will be implemented over a 10 year period although the requirement to manage this reserve to provide suitable habitat for GSM is permanent. The WRMP should be reviewed every 2 years.

Implementation of the plan will be the responsibility of MAB until such time as ownership of the Woodland Reserve is transferred to the responsible authority (the City of Whittlesea). Implementation of the actions outlined in this plan will then become the responsibility of the new land owner.

## 2. Woodland Reserve Management Plan

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Woodland vegetation is prevalent in the north western corner of 165 – 195 O'Herns Road with relatively diverse remnant Plains Grassland vegetation found in the central western and southern portion of the property. GSM is known to occur over much of the site (Biosis 2017b).

To protect existing remnant native vegetation and GSM habitat, MAB have identified the Woodland Reserve in consultation with the City of Whittlesea. The Woodland Reserve will be excluded from development and managed to protect and enhance the significant biodiversity values identified within the reserve, particularly its habitat values for GSM.

DEWHA (2009) indicates that adult GSM are unlikely to travel more than 100 m from suitable habitat, effectively isolating populations separated by more than 200 m. While the woodland reserve will be separated from surrounding areas of retained Golden Sun Moth habitat, the western margins of the reserve are within 200 metres of suitable habitat retained in association with the Edgars Creek habitat corridor (Figure 1). The northern margin of the reserve is about 175 metres east of the creek corridor while the southern margin is about 110 metres away.

While these habitats will be separated by buildings and roads, the northern margin of the woodland reserve will retain a line of sight to the Edgars Creek corridor courtesy of the proposed road network (Figure 1). This road reserve will include grassed nature strips which also have the potential to allow for the movement of GSM. Regular mowing of such nature-strips typically provides a suitable habitat structure for GSM and GSM has been previously observed in such maintained environments within suburban Melbourne. The known population of Golden Sun Moth within the Edgars Creek corridor therefore has some potential to interact with any animals occupying habitat within the proposed woodland reserve and even to colonise this area if the species were to become extinct within the woodland reserve. The GSM habitat within the woodland reserve is therefore not considered to be completely isolated from suitable habitat retained along Edgars Creek.

### 2.1 Pre-construction management actions

#### 2.1.1 Establish and protect Edgars Creek corridor

The Woodland Reserve needs to be protected by means of on-title agreement, zoning and/or overlay provisions. The Whittlesea Planning Scheme may need to be amended accordingly once the boundaries of the Woodland Reserve are accurately defined by survey.

##### **Actions**

MAB in consultation with City of Whittlesea and DELWP will determine and implement a suitable protection mechanism (e.g. a Section 173 agreement, Conservation Covenant or zoning and/or overlay provisions) to protect the Woodland Reserve once the boundaries are formally defined. This will ensure ongoing management to maintain GSM habitat values as required under the EPBC Act and the planning permit.

#### 2.1.2 Fencing

Temporary protection fencing will be required during construction to protect the Woodland Reserve. In the longer term, the Woodland Reserve will need to be delineated and protected through the installation of appropriate fencing (e.g. post and steel cable) to prevent illegal vehicular access and to clearly define the reserve boundary for management purposes. Any fencing will allow adequate and secure access for management vehicles only.

## **Actions**

*MAB will install secure temporary fencing clearly delineating the Woodland Reserve prior to any construction works.*

*'No-go Zone' signs will be attached to all temporary fencing will be along the Woodland Reserve to ensure contractors do not drive in or dump waste or store materials within the Woodland Reserve. These signs will remain in place for the duration of the construction period.*

*After the construction period has finished, suitable sturdy fencing (e.g. post and steel cable or similar) will be installed along the boundary of the Woodland Reserve to prevent unauthorised vehicle access. This fencing will be maintained in good repair in perpetuity.*

## **2.2 Construction management actions**

### **2.2.2 General construction management**

The Woodland Reserve will be protected through the construction phase by implementing the following actions.

#### **Actions**

*Induction of all construction and site personnel will include information about GSM and its habitat within the development area, along with protection measures that will be in place and enforced during the construction period.*

*No construction works are required within the proposed reserve and all physical disturbances will be excluded.*

*Rehabilitation and revegetation works within the Woodland Reserve will take account of the habitat requirements of GSM in accord with advice from a zoologist experienced with the species' habitat (further details provided in Section 2.3).*

*Dust will be controlled during construction to prevent deposition on native vegetation in the Woodland Reserve. Measures will include:*

- ~ minimise extent of exposed soil and/or soil stockpiles*
- ~ water as required to suppress dust emission*
- ~ revegetation / stabilisation of bare soil.*

*No works will be conducted which result in contaminated water and/or silt entering the reserve.*

*No litter or waste material will be deposited into the Woodland Reserve and such materials which find their way into the reserve will be promptly removed without damaging the reserve.*

*Earth and debris will not be pushed through fences into the reserve.*

*Protective fencing will be regularly inspected and maintained in good repair at all times.*

## **2.3 Habitat management**

### **2.3.2 Biomass control**

Grassy Woodlands require a regular biomass control program to maintain biodiversity values, retain a habitat structure suitable for GSM and to control any potential fire hazard.

Much of the Woodland Reserve is typified by infestations of grassy weeds, such as Chilean Needle-grass *Nassella neesiana* and Toowoomba Canary-grass *Phalaris aquatica*, and woody weeds such as African Boxthorn *Lycium ferocissimum* and Sweet Briar *Rosa rubiginosa*. The Woodland Reserve is currently grazed by domestic stock and Kangaroos and these animals are effective in reducing biomass in years of average

rainfall. However, once stock are removed a dense grassy sward is likely to quickly develop in the Woodland Reserve. This will compromise the conservation values of the Woodland Reserve through competitive exclusion.

Biomass reduction will also benefit any GSM populations retained within the Woodland Reserve, as this species requires the maintenance of relatively open grassland for successful reproduction and will also assist with the control of weeds.

The reserve has some areas of embedded rock and uneven ground which would make slashing problematic. However, there are some areas that could conceivably be slashed. Other areas could be subjected to periodic controlled burning (subject to Council approval) or slashing with a "whipper-snipper" (or equivalent).

There is some potential for biomass control to negatively affect GSM through direct mortality (killed during slashing or burning). However, this is likely to be a relatively low risk given these activities can be restricted to times outside of the flight season and is more than offset by the proposed increased improvements in habitat quality. To reduce this risk, no more than 50% of the Woodland Reserve should be burnt in any one year unless that burning can be conducted outside of the period from October to January. This will provide a protected area where biomass control has not been undertaken and hence be a fire refuge for fauna such as GSM.

### **Actions**

*A regime of annual slashing will be undertaken in those parts of the Woodland Reserve where slashing can be achieved. These areas will be delineated and mapped for slashing contractors.*

*All slashing equipment used for biomass control will be free of weed seeds.*

*Where possible, burning will be undertaken annually within the Woodland Reserve, but burning will only be applied to 50% of the reserve in any given year unless that burning can be conducted outside of the period from October to January.*

*In particular burning will provide biomass control for vegetation associated with populations of threatened species and maintain an appropriate habitat structure for such species.*

### **2.3.3 Weed control**

Weed levels in the reserve area are high. Weeds include the highly invasive Chilean Needle-grass and other introduced perennial grasses including Toowoomba Canary-grass, Brown-top Bent *Agrostis capillaris* and potentially the State prohibited noxious weed Lobed Needle-grass *Nassella charruana*. Thistles (Spanish Artichoke *Cynara cardunculus* and Spear Thistle *Cirsium vulgare*) are also prominent. Eradicating and even controlling perennial grassy weeds within the reserve would prove extremely difficult and may be prohibitively costly although any occurrence of Lobed Needle-grass will be the target of State funded control measures. For this reason, and because Chilean Needle-grass is a food plant for Golden Sun Moth, a reduction in the extent of these grassy weeds (except for Lobed Needle-grass) in the reserve is not a target obligation as part of this plan.

However, vegetation management objectives for the reserve will include the targeted reduction of all grassy and herbaceous weeds to less than 10% of the vegetation cover over the ten year timeframe of this plan.

Woody weeds such as Sweet Briar, African Boxthorn and Hawthorn *Crataegus monogyna* within the reserve will be managed to eliminate their occurrence within five years of the initiation of this plan.

## **Actions**

*Weed levels within the reserve will be monitoring every 2 years from the commencement date of this plan.*

*All woody weeds will be promptly eradicated from the reserve.*

*Spanish Artichoke and Spear Thistle will be eradicated within the reserve within 2 years of the approval of this plan.*

*If regular monitoring shows the establishment of Lobed Needle-grass or other novel perennial grassy weeds then these will be promptly eradicated.*

*Areas or individuals of any threatened flora species (natural or translocated) will be pegged to ensure that weed control contractors avoid accidental damage to them during management works.*

### **2.3.4 Revegetation**

The Woodland Reserve supports a number of mature trees and associated regeneration of various ages. The recruitment of River Red-gum is not considered to be restricted within the reserve. However, over abundant recruitment may place undesirable stress on the existing mature trees. While selected sapling trees will be retained within the reserve to maintain a level of canopy cover roughly equal to the DELWP benchmark for Plains Grassy Woodland (15% canopy cover), most eucalypt regeneration will be subject to burning or slashing to prevent the establishment of high densities of saplings.

Ground cover revegetation works are also required for the Woodland Reserve and may in future provide habitat resilience for GSM within the Woodland Reserve. However, a dense contiguous ground-cover of grasses is inappropriate for the objectives of this reserve.

Potential species for ground cover revegetation works are listed in Appendix 1. This list is not comprehensive and other locally indigenous species can also be included in any revegetation works.

## References

Biosis 2017a. *Alliance Business Park, 165 - 195 O'Herns Road, Epping: Matted Flax-lily Translocation Plan*. Report for MAB. Author: Steve Mueck, Biosis Pty Ltd, Melbourne. Project No. 25346

Biosis 2017b. *165-195 O'Herns Road Epping: Biodiversity Assessment*. Report for MAB Corporation. Authors: Mueck S, & Gilmore D Biosis Pty Ltd, Melbourne. Project no. 23682.

City of Whittlesea 2007. *Cooper Street Employment Area Development Plan (adopted version October 2007 and amended 29 October 2013)*. City of Whittlesea.

DEWHA 2009. *Significant impact guidelines for the critically endangered golden sun moth (Synemon plana)*. Nationally threatened species and ecological communities EPBC Act policy statement 3.12. Department of the Environment, Water, Heritage & the Arts. Australian Government, Canberra.

## Appendices

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## Appendix 1: Plants suitable for ground-cover revegetation works

Indigenous species useful for the revegetation of the herb-rich grassy ground cover typical of an area of Plains Grassy Woodland. It is not a detailed specification and other locally indigenous plants should also be used.

Table A1.1: Woodland planting list

Scientific name	Common name
<i>Acacia mearnsii</i>	Black Wattle
<i>Acacia melanoxylon</i>	Blackwood
<i>Agrostis avenacea</i>	Common Blown-grass
<i>Anthosachne scabra</i>	Common Wheat-grass
<i>Arthropodium minus</i>	Small Vanilla-lily
<i>Arthropodium strictum</i>	Chocolate Lily
<i>Asperula conferta</i>	Common Woodruff
<i>Carex appressa</i>	Tall Sedge
<i>Carex bichenoviana</i>	Plains Sedge
<i>Carex inversa</i>	Knob Sedge
<i>Craspedia paludicola</i>	Swamp Billy-buttons
<i>Dichelachne crinita</i>	Long-hair Plume-grass
<i>Eryngium vesiculosum</i>	Prickfoot
<i>Lobelia pratioides</i>	Poison Lobelia
<i>Lomandra longifolia</i>	Spiny-headed Mat-rush
<i>Melicactus dentatus</i>	Tree Violet
<i>Microlaena stipoides</i> var. <i>stipoides</i>	Weeping Grass
<i>Poa labillardierei</i>	Common Tussock-grass
<i>Poa sieberiana</i> var. <i>hirtella</i>	Grey Tussock-grass
<i>Rumex brownii</i>	Slender Dock
<i>Rumex dumosus</i>	Wiry Dock
<i>Rytidosperma duttonianum</i>	Brown-back Wallaby-grass
<i>Rytidosperma erianthum</i>	Hill Wallaby-grass
<i>Rytidosperma fulvum</i>	Copper-awned Wallaby-grass
<i>Stellaria angustifolia</i>	Swamp Starwort
<i>Themeda triandra</i>	Kangaroo Grass
<i>Tricoryne elatior</i>	Yellow Rush-lily
<i>Veronica gracilis</i>	Slender Speedwell
<i>Wahlenbergia communis</i>	Tufted Bluebell