Habitat
Innovation & Management

Annual Report – Eucalyptus canobolensis Enhancement Plan

Errowanbang, NSW

Wiradjuri Country

PROJECT NUMBER	2022-68 HAB		
PROJECT NAME	Annual Report – Eucalyptus canobolensis Enhancement Plan		
PROJECT ADDRESS	Errowanbang, NSW		
ACKNOWLEDGEMENT OF COUNTRY	Wiradjuri Country		
PREPARED FOR	Flyers Creek Wind Farm Pty Ltd		
AUTHOR/S	Mick Callan		
DATE PREPARED	November 2023		
REVIEW	Technical	QA	Version
			Final
VERSION	Final	13/11/2023	

This report should be cited as: 'HABITAT INNOVATION AND MANAGEMENT (2023). Annual Report – Eucalyptus canobolensis Enhancement Plan– Errowanbang, NSW - Wiradjuri Country. Prepared for Flyers Creek Wind Farm Pty Ltd.'

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Introduction and Background

Iberdrola Australia Limited is a leading renewable energy company that has a demonstrated commitment to the improvement of the environment within the regions in which it operates.

With the assistance of Habitat Innovation and Management, Flyers Creek Wind Farm Pty Ltd (FCWF), a subsidiary of Iberdrola Australia Limited, has developed the *Eucalyptus canobolensis* Enhancement Plan. The purpose of that plan is to enhance the population of the threatened Silver-Leaf Candlebark (*Eucalyptus canobolensis*), which grows in and near the vicinity of the Flyers Creek Wind Farm.

This species is listed as Vulnerable under the NSW Biodiversity Conservation Act 2016 (BC Act) and Endangered under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act).

As a result of the threatened status of this species, as well as its limited distribution, it has been assigned to the site-managed species management stream under the NSW Government's Saving our Species (SoS) program. A priority management site has been identified which is the Mount Canobolas State Conservation Area, located across both the Orange and Cabonne Local Government Areas, and managed by the NSW National Parks and Wildlife Service.

The Enhancement Plan provides details of population enhancement actions that are being undertaken to ensure a positive net gain for the overall population of Silver-Leaf Candlebark including:

- Population enhancement actions to be undertaken by FCWF
- Stakeholders involved in order to deliver on the population enhancement actions
- Timing of when population enhancement actions will be undertaken
- Annual project updates provided to NSW Department of Planning & Environmnet (DPE)

This report represents the first annual project update to be provided to DPE to outline the population enhancement actions undertaken to date, the actions that are still in the planning phase, and any issues and adaptive management undertaken to ensure the successful delivery of the project.

Figure 1: Silver-Leaf Candlebark Population Enhancement Actions

Population Enhancement Actions

The *Eucalyptus canobolensis* Enhancement Plan and the included Population Enhancement Actions were developed based on a review of relevant literature as detailed in that plan. In summary there are a range of risks and opportunities identified that are being addressed through appropriate actions relating to the broad themes of weed infestation and control; increasing the number and range of the species; and public education and awareness.

Population Enhancement Action 1: Annual weed control

Annual weed control has been planned adjacent to the 132 kV transmission line constructed as part of the Flyer's Creek Windfarm project. The site represents a very small pocket of land bound by pine plantations, the transmission line easement and roads and is further referred to as Site 1. This location is where a single mature Silver-Leaf Candlebark Tree is located.

Given the limited area at this location, and the surrounding land use (as described above), annual weed control is being conducted to facilitate the natural recruitment (seedling establishment) of Silver-Leaf Candlebark trees.

A suitably qualified and experienced weed control/bush regeneration specialist has been engaged to conduct the annual weed control works at this site for a period of 5 years. The primary focus is the control of wilding pines (*Pinus radiata*) and Blackberry (*Rubus fruticosis*) spreading from the surrounding pine plantation, with all other exotic plant species targeted during works. Best management practice weed control has been adopted including hand pulling of pine seedlings, felling of pine saplings, spot spraying of blackberry and other weeds, and 'cut & paint' herbicide application to blackberry and other woody weeds as appropriate.

1.1 Works completed to date

Initial weed control works were conducted on 23 May 2023. As anticipated the majority of weeds present were blackberry and pine spreading from the adjoining pine plantation with small amounts of other exotic pasture species also controlled.

1.2 Remaining works to be completed

Follow up weed control works are planned to continue at Site 1 each spring up to and including 2026. Works for the 2023 calendar year were scheduled for early November but had to be postponed due to the forecast of significant rainfall events. This work is now scheduled for late November 2023.

1.3 Issues, opportunities and adaptive management

The initial weed control works conducted at Site 1 appeared to show that the majority of the weeds present were spreading from the adjoining pine plantation where significant blackberry infestations were recorded. It is planned that the extent of weeds that have reinfested the area will be recorded during the 2023 control period to identify if the weed species of concern are continuing to spread from the plantation. This will be completed by establishing photo monitoring points and provision of mapping of current infestations to provide a robust monitoring framework. Additionally, Habitat Innovation and Management will consult with FCWF management to discuss the potential to raise the issue with relevant staff from Forestry Corporation NSW with a view to requesting them to prioritise weed control within their plantations adjacent to the site.

The postponement of the planned weed control works for the 2023 spring season is simply due to the high potential for rain and the resultant limited effect of any herbicide treatment. Barring any other inclement weather or unforeseen issues, this weed control will be completed prior to the end of November 2023.

Population Enhancement Action 2: Retain all buds, fruits and seed pods on site

All buds, fruits and seed pods from existing native vegetation at Site 1 as described above, has been retained on site to ensure that any viable seed material has the opportunity to germinate.

This action has been completed.

Population Enhancement Action 3: Carving and installation of ‘Log Hollows’

Experienced ecologists specialising in hollow dependent fauna were engaged to create 'log hollows' from a previously felled tree at Site 1. This was achieved by cutting suitably sized limbs to appropriate lengths for the target species of animals and carving hollows directly into the timber.

The recorded presence of Squirrel Gliders (*Petaurus norfolcensis*) in the woodland vegetation adjacent to Track 15 at the FCWF presented the ideal target species for the ‘log hollows’.

3.1 Works completed to date

The timber was salvaged on 23 May 2023 after which time the 'log hollows' were carved using a combination of chainsaws and the 'Hollowhog' tool and were customised to the preferred dimensions of the target species based on their expert knowledge and relevant scientific literature. A total of 8 ‘log hollows’ were created, 7 for Squirrel Gliders and 1 for microbats.

These ‘log hollows’ were installed in the woodland vegetation surrounding Track 15 at FCWF on 23 August 2023 with photos and gps coordinates recorded for each installation.

These newly created 'log hollows' will then be installed in appropriate trees to create shelter, nesting and denning opportunities for a range of native species including parrots, gliders, possums and microbats. Locations where 'log hollows are to be installed will be based on expert ecological knowledge with input from FCWF staff.

3.2 Remaining works to be completed

This population enhancement action has now been completed. There is the potential to monitor the installed 'log hollows' to identify if any of the target species, or any other fauna, are using the newly created habitat.

3.3 Issues, opportunities and adaptive management

The recording of Squirrel Gliders on site allowed for this aspect of the works to contribute directly to the enhancement of habitat for this threatened species resulting in multiple benefits from this enhancement action.

Figure 2: Carved log hollows for Squirrel Gliders installed on site at FCWF

Population Enhancement Action 4: Community Planting Event at Lake Canobolas

To increase the population size and extent of Silver-Leaf Candlebark, FCWF will work cooperatively with Central West Councils Environment & Waterways Alliance (The Alliance) and their member council,

Orange City Council, to host a community tree planting event at Lake Canobolas. By engaging the community through a community planting day event to plant Silver-Leaf Candlebark, and the installation of educational signage, broad educational and awareness outcomes will be addressed in addition to increasing the population of *E. canobolensis*.

Lake Canobolas is located at the base of Mount Canobolas and was constructed in 1918 to provide water to the township of Orange. The lake is fed by Molong Creek and has become a popular recreation area for locals and visitors alike. This site was selected due to its suitability for increasing the population and extent of Silver-Leaf Candlebark within its known range, in a location with a high level of visitation from residents and visitors to the region.

Work conducted at Lake Canobolas will align with relevant recovery strategies and actions around establishing additional populations of Silver-Leaf Candlebark, and community education and awareness.

4.1 Works completed to date

The Friends of Orange Botanic Gardens and Arboretum have been engaged, as a licenced seed harvester and grower, to collect, propagate and grow Silver-Leaf Candlebark seed to tubestock stage ready for planting. The seed was collected from Lake Canobolas and sown on 28 August 2023. A total of 200 plants have been ordered of mixed species that are appropriate with the local vegetation community, with *E. canobolensis* to make up approximately one quarter of the plants for the community day planting event.

Contact has been made with Central West Councils Environment & Waterways Alliance (the Alliance) and Orange City Council. Conveniently, the CEO of Orange City Council is also the current Chair of the Alliance which has aided in streamlining the process for organisation of the community planting event with both organisations.

Orange City Council, through their CEO, Natural Resources Coordinator, and Manager – City Presentation, have agreed to hosting the community planting event at Lake Canobolas as well as permitting and assisting with the proposed educational signage to be installed there. The Alliance have agreed to assist with the event organisation and importantly will help to promote the event through their website and social media channels.

Preliminary contact has been made with Orange City Council's contracted Community Environmental Engagement Officer, Mr Bill Josh of Habitat Connect. Bill has agreed to in principle, assist with community planting day event and an agreement will be put in place once a date for the event has been finalised.

4.2 Remaining works to be completed

Liaison with the Friends of Orange Botanic Gardens and Arboretum will continue in order to ascertain a definitive date for when the seedlings have grown out to a suitable size for planting. At this stage, it is anticipated that this will be in February-March 2024.

Once confirmation is received of a date for the plants to be collected, a date will be identified to host the community planting day event in consultation with Orange City Council staff, the Alliance and the Community Environmental Engagement Officer. At this point the event promotion will commence which is proposed to be completed through the following means:

- Inclusion of the tree planting day as an event on the Alliance website: cwcewa.com.au/events
- Promotion of the event through Alliance social media channels Facebook and Instagram
- Preparation and distribution of a media release to promote the event

The Community Environmental Engagement Officer will be contracted to prepare the planting site, provide weed mats and tree guards, prepare the site for planting, oversee the volunteers on the day and provide follow-up maintenance of the plants through watering and/or weed control as necessary.

4.3 Issues, opportunities and adaptive management

The community planting event aspect of the overall project has been delayed due to a range of factors. Initially, we needed to seek clarification from NSW National Parks and Wildlife Service regarding the correct contacts and requirements for seed collection and propagation of *E. canobolensis* seed, given that it is a listed threatened species under both the NSW BC Act 2016 and the Federal EPBC Act 1999.

Once these requirements were understood, several streams of enquiry were followed to find a suitable contractor with the appropriate permits to both collect and grow the seed for the project. Having engaged the Friends of Orange Botanic Gardens and Arboretum, there was a further delay in finding suitable seed for collection. However, by engaging this volunteer-based group we are further contributing to positive community outcomes.

While this event was initially planned for Spring 2023 and is now behind schedule, a revised date for the community planting event will be decided upon to ensure alignment with the various stakeholders involved, will be planned once the tubestock plants are of a suitable size and maturity for planting, and importantly, when it is considered that seasonal conditions and forecasts are favourable to plant survival. Ideally this will occur in Autumn 2024.

Population Enhancement Action 5: Educational and Awareness Raising Program

To raise awareness of the threatened status of Silver-Leaf Candlebark, as well as the ongoing threats to its persistence, FCWF is working with Central West Councils Environment & Waterways to develop a range of educational and awareness raising resources regarding this threatened species.

A range of resources have or will be produced and distributed including:

- Promotion of the community planting event through The Alliance website, social media channels, and a media release.
- Development of a Silver-Leaf Candlebark educational/awareness raising page on The Alliance website and associated social media posts.
- Development of educational/awareness raising signage to be installed at Lake Canobolas adjacent to the community planting site.

Additionally, the community planting event will be a great opportunity to engage with the community to discuss the threats to the species, the importance of the planting day, and species identification.

5.1 Works completed to date

An educational/awareness raising page has been included on the Alliance website: cwcewa.com.au/current-projects

Additionally, social media posts raising awareness of the species have been posted to the Alliance Facebook and Instagram pages.

5.2 Remaining works to be completed

Over the coming months the Alliance website will be updated to include the community planting event as a listed 'event' on the website. This will be accompanied by promotional posts through the relevant social media channels and a media release to promote the planting day will be developed and distributed.

Design work on the educational signage to be installed at Lake Canobolas has begun and will be finalised in early 2024 prior to having signage manufactured. The sign will be installed at or in the lead up to the community planting event.

5.3 Issues, opportunities and adaptive management

The delay in the hosting of the community planting event has necessarily resulted in the delay of the majority of the educational/awareness raising aspects of this project, but they are well on track to being delivered in full in early 2024.

2023

Silver-leaf Candlebark (*Eucalyptus canobolensis*) Project

Eucalyptus canobolensis, commonly known as the Mount Canobolas Candlebark or Silver-leaf Candlebark, is a species of tree that is endemic to a small area of New South Wales in eastern Australia. It is a small tree with smooth bark on the trunk and branches, dull, lance-shaped adult leaves, flowers buds in groups of three, white flowers and cup-shaped, bell-shaped or conical fruit. Juvenile growth is distinctive with stems that are square in cross section and glaucous juvenile leaves that are opposite and sessile (without a defined leaf stem). It is only known from Mount Canobolas near Orange.

Eucalyptus canobolensis is classified as "endangered" under the Australian Government Environment Protection and Biodiversity Conservation Act 1999 and as "vulnerable" under the New South Wales Government Biodiversity Conservation Act 2016. The main threats to the species are weed invasion, especially by blackberry (Rubus fruticosus) and Pinus radiata from nearby plantations, infrastructure development and forestry operations.

The Alliance has partnered with Orange City Council and Friends of the Orange Botanic Gardens to collect and grow Silver-Leaf Candlebark seed in preparation for a community planting day at Lake Canobolas with the aim of increasing the population size and extent of this species. Keep an out on this website and social media platforms for further information about how you can be involved in the community planting day and contributing to the recovery of this threatened species.

More information on this threatened species can be found at https://www.environment.nsw.gov.au/threatenedspeciesapp/profile.aspx?id=10290

Images showing mature trees and the distinctive juvenile foliage and square juvenile stems.

Figure 3: Silver-leaf Candlebark page from the Environment & Waterways Alliance website

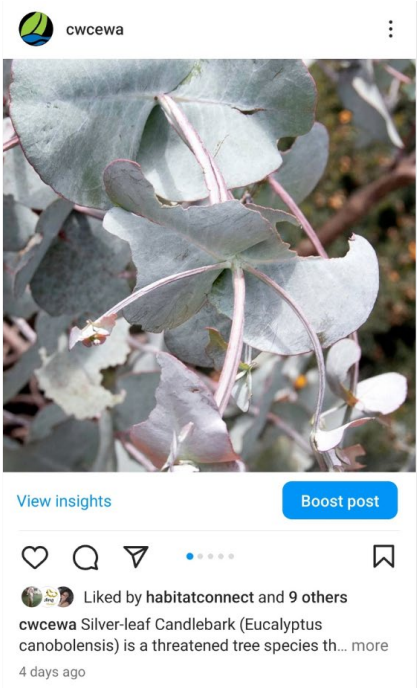

Figure 4: Screenshots of social media posts raising awareness of Silver-leaf Candlebark

Population Enhancement Action 6: Annual Reporting and Adaptive Management

This report, and the proceeding annual reports, represent the final action from the *Eucalyptus canobolensis* Enhancement Plan. These reports will be delivered annually in November through to 2026 when the final report will be submitted.

As has been summarised through the Population Enhancement Action sections above, all works are on track for completion, with some components delayed from the initial timeline included in the *Eucalyptus canobolensis* Enhancement Plan. This timeline is included below at Figure 5.

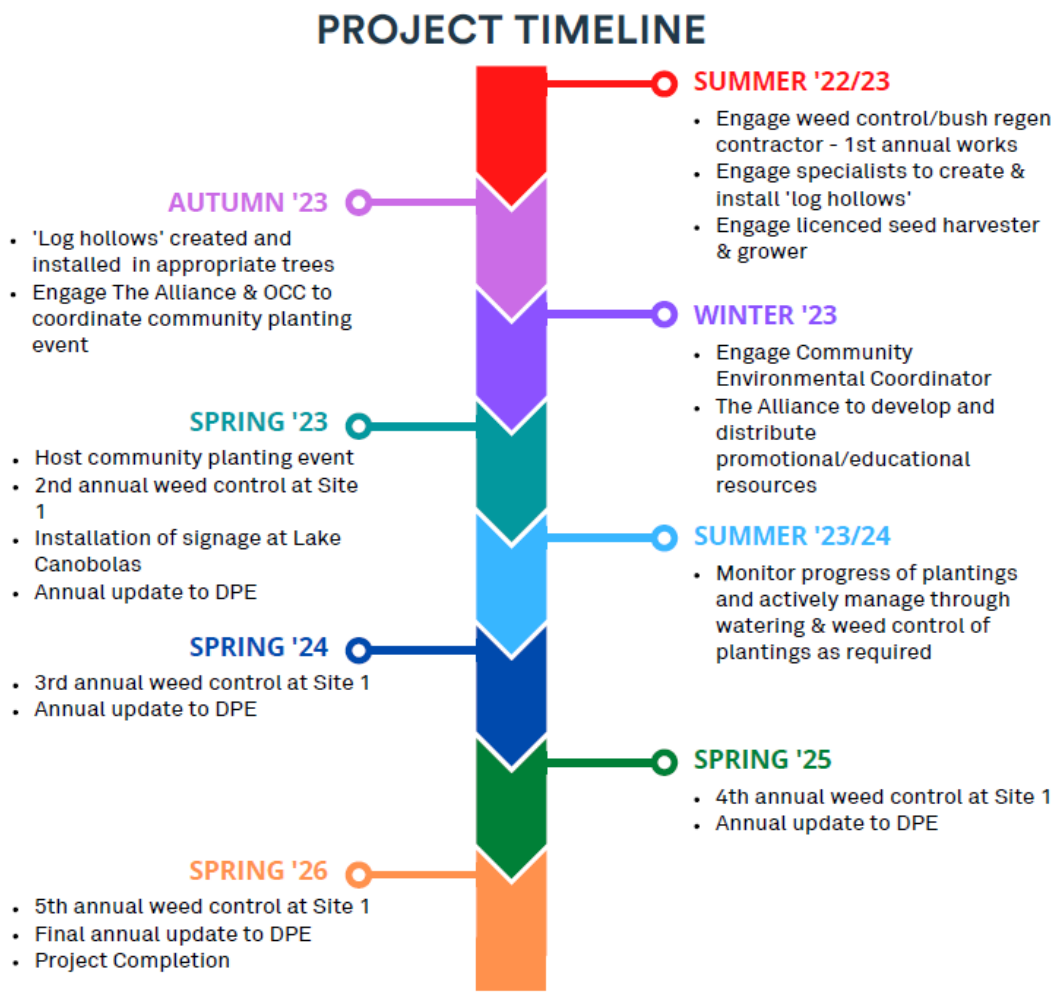

Figure 5: Eucalyptus canobolensis Enhancement Plan project timeline

Conclusion and Recommendations

This project is being delivered in accordance with the governing Eucalyptus canobolensis Enhancement Plan to successfully engage with a range of relevant stakeholders, provide practical and effective on-ground actions, and provide appropriate adaptive management solutions where necessity or opportunity has presented.

There have been examples where the project has reached beyond the desired outcomes to provide additional benefits. This has been particularly the case in the use of the created log hollows being targeted towards providing additional habitat for threatened Squirrel Gliders on site, and the engagement of the volunteer group, Friends of Orange Botanic Gardens and Arboretum to collect, propagate and grow the *Eucalyptus canobolensis* seed for the planned community planting day.

The community planting day was originally scheduled for Spring 2023 but has been delayed due to additional time required to complete the seed collection stage of the project. However, this is not seen as having a negative impact on the overall project delivery, and the delivery of this important component of the works schedule is well on track for completion early in the 2024 calendar year.

It is recommended that the timing and delivery of the community planting day be carefully scheduled in consideration of overarching weather conditions to ensure that the plantings have the best chance of survival in the face of potential drought conditions.

Photo point monitoring and mapping of the extent of the weed infestation around the existing *Eucalyptus canobolensis* tree will be conducted to provide robust monitoring of the extent of weed infestation and to inform future management actions. This will be particularly important if it is demonstrated that weeds are continuing to establish and spread from the adjacent pine plantation.

Barring any unforeseen complications, we anticipate that the 2024 annual report will detail the completion of the majority of the Population Enhancement Actions with only annual weed control works to be completed beyond that time.

The hosting of the community planting event along with the associated educational and promotional outcomes in early 2024 will be a major milestone in the delivery of this project, representing a positive net gain for the overall population of Silver-leaf Candlebark and an increase in community knowledge and awareness of the species.