

EXCELLENCE IN THE ENVIRONMENT AWARDS



Connecting Camden White Gum

COUNCIL NAME

Camden Council

WEB ADDRESS

<http://camden.nsw.gov.au>

SIZE

201 square
kilometres

POPULATION

107,806

Overview

This project established a one-hectare seed orchard of 437 genetically diverse Camden White Gum (*Eucalyptus benthamii*) at Elizabeth Macarthur Reserve along the Nepean River at South Camden. The Camden White Gum is listed as Critically Endangered under state legislation and is under threat due to its small, fragmented populations and loss of gene flow.

Once established, the trees will increase the tree canopy cover of the Reserve by 38% and strengthen the species resilience by increasing gene flow and connecting other isolated subpopulations throughout the Nepean River riparian corridor.

Background

The Camden White Gum (*Eucalyptus benthamii*) is a large canopy tree species that grows up to 40m in height and has been shown to withstand water inundation for up to six weeks. The species is listed as Vulnerable under Commonwealth legislation and Critically Endangered under State legislation and is under threat due to its small, isolated populations and loss of gene flow which increases the rate of inbreeding. Clearing for agriculture and urban development has left remaining trees too far apart to pollinate each other, resulting in low quality seed for the next generation of trees.

The species could become extinct without intervention. The Camden White Gum is a locally iconic species of cultural significance to the Dharawal People and is a priority for conservation.

The project was delivered in collaboration with the CSIRO Australian Tree Seed Centre (CSIRO), The Australian Botanic Garden Mount Annan, Australian Institute of Botanical Science, The University of Sydney, and Sydney Metro Airports (Camden Airport).



Implementation

Project implementation included:

- development of a project plan
- community engagement resulting in planting area changes responding to bush fire concerns
- 2021 site preparation and planting of 508 trees
- 2022 - 4 Flood events – loss of 208 new plants
- Post flood soil testing and review of survival factors
- 2022 - 200 replacement plantings with focus on sandy soils
- Promotional video and social media posts
- Partnership with the NSW Department Planning and Environment as part of a five-year research project under the Saving our Species program and monitoring and support via a partnership with the University of Sydney

Outcomes

The project resulted in the establishment of 437 healthy and genetically diverse Camden White Gums, with a survival rate of 87.4%. with some of the trees exceeding 5m in height. Data for each of the trees has been recorded, including GPS location and measurements to enable ongoing monitoring of the health of the trees.

This was achieved despite four major flood events in 2022 impacting the trees, and the limited availability of stock to replace lost trees.

The relationships established and fostered through the project have been successful and led to discussions and future opportunities to advance Council and its partner's work in the conservation of the Camden White Gum.

The seed orchard will be used for further research and will also serve as a working demonstration site.



The University of Sydney has made available two honours research projects to quantify carbon sequestration and energy exchange and assess the genetic variation in health and vitality among the plantings.

The project and partnerships have been showcased through a [promotional video](#), as well as through blog posts, case studies, websites and social media. At the end of the project period, the video had reached over 12,500 views. Other social media posts and engagement activities reached more than 23,000 people, and more than 100 people participated in a community planting event in November 2022.

Key Learnings

The University of Sydney's post flood tree loss and soil testing review revealed that trees planted in soils with more sand coped better with the floods and were healthier compared with trees planted in areas with higher clay content. Based on this, locations for the 200 replacement plantings were prioritized in sandier areas with planting occurring in November 2022. This information will also inform the location of future plantings.

The principle of planting locally threatened species in an urban environment that are contiguous with remnant patches of natural vegetation has a very wide application and potentially significant conservation benefits. In addition it contributes to increasing canopy, providing shade and cooling, improved biodiversity and connectivity, and increasing amenity in recreational reserves.

Contact

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This project was the 2023 winner of the 'Natural Resource Management (On Ground Works) Award' at the LGNSW Excellence in the Environment Awards.

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This project is part of the Greening Our City grant program that is proudly funded by the NSW Government in association with Local Government NSW.