

EXCELLENCE IN THE ENVIRONMENT AWARDS



COUNCIL NAME

Hilltops Council

WEB ADDRESS

www.hilltops.nsw.gov.au

SIZE

7,141 square kilometres

POPULATION

18,617

Bribbaree Velvety Tree Pear Biocontrol Program

The Bribbaree biocontrol program was launched at the end of the drought of 2018. The site was highly infested with the invasive cactus species known as Velvety tree pear. Chemical spraying for weed control was deemed impractical, whereas natural biocontrol offered a less harmful, more environmentally practical method of controlling this cactus over a longer period of time. Through trials and tribulations, Hilltops Council staff have grown a small facility into a large scale greenhouse enabling multiple annual releases of the biocontrol agent known as Cochineal (*Dactylopius opuntia*).

Background

A 10 hectare site at Bribbaree, approximately 50km north-west of Young, was highly infested with Velvety tree pear. This cactus species is known to grow to over 6 metres in height and can grow from cladodes (leaves of the plant) being shed or dropped onto the ground. It can multiply rapidly in the warmer times of the year.

Council has a general biosecurity duty to control and mitigate the spread of Velvety tree pear from its land, and also to reduce the impact of the plant on assets of high economic, environmental and/or social value. As the site is located close to a village, it was important to control the cactus safely. Chemical control through spraying was not deemed feasible so Council staff designed a program to breed and release cochineal insects onto the cactus over a period of 3-5 years. The female cochineal insect burrows into the cactus, sucking nutrients from the plant until the plant is exhausted and dies.



Implementation

Hilltops Council staff travelled to Lightning Ridge to gather information on how Castlereagh Macquarie County Council (CMCC) grow and release cochineal to control Hudson pear. With the help of CMCC and Parkes Shire Council, Hilltops Council procured some cochineal insects to control this specific species of cactus (there are 9 different species of cochineal).

Initially the cochineal was grown in small amounts using a recycled IBC plastic 1000 litre container. This process was very slow but in early 2023, Hilltops Council was successful in receiving a Weed Action Program grant from South East Local Land Services (LLS) to build a large scale greenhouse (approx 8m x 6m), which enabled it to grow more cochineal rapidly and release it multiple times a year. Council can now grow up to sixteen 60 litre tubs at any time, enabling the cochineal to also be distributed to the community or regional weeds partners.



Large releases of the cochineal were made in the eastern portion of the Bribbaree site. The insect is spread by wind and have now spread several hundred metres to the western ends of the project site.

The long term goal of this project is to eradicate the cactus. Several visits are made throughout the year to observe the spread of the insect and the reduction of the cactus population.

Outcomes

The original method for breeding the cochineal only allowed for one or possibly two releases per year. However the new greenhouse enables the cochineal to be grown in a matter of weeks in the warmer months, with multiple releases in the grow seasons. In a particularly wet year which saw over 1000mm of rainfall and followed four wet years in the region, the cochineal infection rates of the cactus decreased but a warmer summer saw them grow rapidly and infect more and more cactus.

Some of the cactus plants are over 6 metres tall and more than 10 years old, however they are showing the effects of the cochineal insects and starting to die. Small new plants are unable to establish quickly, and the insects are spreading rapidly through the other cactus.

Key Learnings

The initial stages of the project involved rapid learning. Council initially received several of the wrong species of cochineal that were not host-specific to the Velvet tree pear. Watering the plants proved somewhat difficult given the regional climate and the cochineal being more suited to the semi-arid environments of the deserts of Southern

America and Africa. This required Council to water the plants in a way that simulates a dew effect rather than a rainfall event.

Once the Bribbaree site has been eradicated of all cactus species, Council wishes to continue growing the cochineal and other biocontrol agents in its greenhouse for the benefit of the community and greater region. As well as continuing to expand the facility, Council is also looking into other plant species that can be grown in a controlled environment. This will help Council and other land managers to control weeds in a more environmentally friendly way, lessening the use of herbicides where possible.

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This project was the 2024 Overall Winner of the Invasive Species Management category at the LGNSW Excellence in the Environment Awards

