Nursing our natives

A new state-of-the-art nursery at Scottsdale Reserve will generate up to 10,000 native plants a year with almost no environmental footprint, thanks to solar technology, wetland filtration and a waste water recycling system.

← Woolly Tea-tree seedlings.
Photo by Anna Carlile.

Sometimes it's the meeting of minds that turns an idea into reality. In the case of Scottsdale Reserve's new state-of-the-art native plant nursery, it began with three minds: Ian Sharp, a philanthropist with a passion for innovation; Phil Palmer, an experienced reserve manager with a background in nursery design; and Field Officer Brad Riley, a water planning specialist. These three minds, with the help of many others, devised innovative solutions to tricky problems.

Over 30,000 native seedlings have been planted on Scottsdale Reserve since Bush Heritage purchased it in 2006. The long-term aim of this revegetation is to restore degraded grasslands and reconnect habitats so that native species – from endangered woodland birds to the region's diverse reptile population – have the best chance of survival. But sourcing all those seedlings has been a resource-intensive operation. Many of the herbs and forbs were grown on-reserve in a small nursery requiring year-round maintenance, while most trees were purchased from project partners such as Greening Australia, or commercial growers.

With aspirations to significantly increase the diversity and extent of restoration efforts on Scottsdale, it was clear a more sustainable and cost-effective way of growing native plants was needed. The challenge lay in designing a nursery that could produce enough plants to meet all these needs, without also being a drain on Phil and Brad's time.

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"I know what it takes to run a plant nursery," says Phil, referring to his childhood spent helping out on his uncle's remote native plant nursery. "It requires constant attention; you can't have a day off without fear of losing water and valuable plants. It was only thanks to some incredibly dedicated volunteers that we were able to keep the old Scottsdale nursery running as well as we did. That level of dedication is hard to find though."

↓ The new nursery mid-construction. Photo by Phil Palmer
↘ Gang-gang Cockatoos are one of the many species that will benefit from Scottsdale's revegetation. Photo by Graeme Chapman
→ A 'smart system' monitors and automatically adjusts the input of water at Scottsdale's new nursery. Photo by Annette Ruzicka

With that in mind, Bush Heritage's vision for Scottsdale's new nursery was for one that could self-monitor and be controlled remotely, so that staff and volunteers could focus on other work, such as getting the plants in the ground.

Enter Ian Sharp. A philanthropist and environmentalist with a specific interest in renewable energy, Ian approached Bush Heritage almost two years ago, looking for a meeting point between conservation and technology. The Scottsdale nursery was the obvious project for him to get involved in, and his interest in renewable energy soon resulted in the inclusion of solar-powered heat beds into the nursery designs.

With Ian contributing his technological expertise, and volunteer builder John Gain joining the project team, the project soon evolved "into something that perhaps neither Bush Heritage nor I ever imagined at the beginning," says Ian.

Situated on the Monaro high plains, some 75 kilometres south of Canberra, Scottsdale is subject to long hot summers and bitterly cold winters, making plant propagation a difficult and slow process. Ian's heat beds – powered by photovoltaic panels on the nursery's roof – sit underneath the young plants to stimulate seed germination and maximise growth rates, thus essentially extending the growing season.

True to the original vision, the heat beds are controlled by a 'smart' system that monitors their temperature and adjusts them as needed. The same smart system also monitors and automatically adjusts the input of water (pulled from the nearby Gungoandra Creek) to maintain optimum moisture levels and further improve growth rates.

The nursery's efficiency doesn't stop there though. Once the water has circulated through the plant beds, the excess is captured and gravity-fed to a purpose-built wetland designed by Field Officer Brad Riley, which filters out nutrients such as nitrogen and phosphorous. The clean water can then be used to irrigate revegetated parts of the reserve, and the wetland itself becomes a nursery for wetland plant species, "which will be used in the future to rehabilitate Gungoandra Creek," says Brad.

It's a system in which every element has been carefully considered to maximise opportunities for sustainability and improved efficiency.

"Thanks to this nursery, we're aiming to propagate and plant up to 7000 native trees and shrubs every year for the next five years on Scottsdale," says Phil.

"We'll also be able to propagate some 3000 extra plants to support revegetation efforts at other Bush Heritage reserves in south-east NSW, as well as those of our key partners and neighbours.

"Our hope is that the nursery will help to attract even more people to Scottsdale who share our passion for land restoration, and inspire other local landholders to join in our efforts to re-connect the region." ●

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