



Plant Press



CROSS-BORDER COMMUNITY NURSERY NEWSLETTER

Volume 1—Issue 1

Jan– Feb 2014

Newsletter debut

Welcome to the first edition of the *Plant Press* Newsletter produced by Nature Glenelg Trusts Cross-Border Community Nursery.

The purpose of the Newsletter is to keep growers, seed collectors, revegetators and interested community members up to date with activities and events being run either by the Nursery or in partnership with other organizations. It will also provide current and relevant information about the germination and propagation of native plants discovered by plant scientist and professional and amateur plant growers in our region. Where relevant, knowledge and experience from further afield will be included.

Nursery sowed seeds for success in 2013

Before arriving in Mount Gambier to take up the position of the Cross-Border Nursery Co-coordinator in late February 2013, I was aware that there wasn't much in the way of a nursery to coordinate.



Nursery during construction in April 2013

Nonetheless, when I arrived, I headed straight down to Vansittart Park to check out my new work place. After a few laps around the Park I decided that the few trays of plants placed on top of an old farm gate, adjacent to what looked like a derelict and roofless old toilet block must actually be the 'Nursery'.



Nursery in early January 2014

Nearly twelve months later, and after many hours working with builders, NGT staff and volunteers, I am delighted to say, we have now dispensed with the farm gate and actually have a small but very well equipped nursery, which includes a spanking new greenhouse.

Since our official opening in June 2013 we have propagated around 40 species, including many threatened species from South Australia and Victoria.

Threatened species in the Nursery

Athropodium milleflorum



Vulnerable in South Australia

Illustrated by Samantha Baker

Volunteers Welcome

The Cross-Border Community Nursery invites interested community members join our Friends of the Cross-Border Nursery Group.



Volunteer Samantha Baker & Internee, Yvonne Riley working in the nursery

Friends Group members will be involved in all aspects of propagation, nursery care and the development of our community herbarium. We'd love to hear from anyone who is interested in being involved. Nursery opening hours are 10-12 Wed & Sat.

Forums & Workshops well received

In 2013 The Cross-Border Community Nursery worked with State environment agencies and community groups, on both sides of the Border, to deliver seven seed collecting and propagating forums and workshops.

2014 is shaping up to be another busy year.

Following on from the success of our *Sowing the Seeds of Success Forum* in Hamilton in September 2013, the Coorong District Local Action Plan



CSIRO seed geneticist Linda Broadhurst, giving a presentation at the Hamilton Seed Forum. Photo: Lachlan Farrington

(LAP) Committee and the Lakes Hub Community Nursery Network are hosting another Seed Forum in Tailem Bend in 2014.

This Forum will feature Linda Broadhurst, tissue culture specialist Andrea Kodym, and geneticist Adam Miller.

Researchers ramp up *Gahnia radula* production



Researchers Andrea Kodym and John Delpratt, examining growth of *Gahnia radula* plants propagated by tissue culture.



NGT wetland project officer, Dan Anderson, demonstrated admirable dexterity with stockings while bagging these *Gahnia* seed heads.

It is now recognized that sedges like *Gahnia* and *Lepidosperma* play an important role in the ecology of many ecosystems.

However, the inclusion of many species of these genera in revegetation programs has proven difficult due to the inherent low viability of the seed and because they can be very slow to propagate vegetatively.

While this fact is well known to many propagators, what is not so well known is that there is often a complete failure of the seed to develop an endosperm in many of these species.

In one study carried out by Dr Andrea Kodym & John Delpratt at the University of Melbourne (Kodym & Delpratt, 2010), 2,694 *Gahnia radula* fruits from 175 inflorescences were collected from five different locations. Although this

fruit had the outward appearance of being well formed and healthy no filled fruit was found (Kodym & Delpratt, 2010).

A Study of *Lepidosperma concavum* (Kodym et al 2010) revealed that filled fruits are shed soon after maturation, while unfilled fruits remained on the inflorescence. This study also revealed that the timing of collection was critical to securing good quality seed. Bagging the inflorescences of *Lepidosperma* & *Gahnia* species has turned out to be important for recovering filled fruit, especially for *G.radula*. Happily, after several years of research Dr Kodym has now worked out how to grow *G.radula* reliably from tissue culture. This knowledge has recently been passed on to a commercial tissue culture laboratory for mass production. At the moment, only one population (from Drouin) is in production.

Here at the NGT Nursery we are hopeful of recovering filled fruit for tissue culture from *G.radula* populations that we bagged on both sides of the SA/Vic border in December 2013.

References

Kodym, A. Delpratt J. (2010) Systematic investigation of fruit viability in Thatch Saw-sedge (*Gahnia radula*, Cyperaceae). *Ecological Management & Restoration*, Vol. 11, No 1.

Kodym, A; Turner S. and Delpratt J. (2010) In Situ seed development and in vitro regeneration of three difficult-to-propagate *Lepidosperma* species (Cyperaceae). *Australian Journal of Botany* 58,1

For further information contact:

akodym@unimelb.edu.au

*Papers referred to here are available for loan from the NGT Library



This photo shows some tetrazolium stained seeds.

Tetrazolium (TZ) is regarded as a quick test of seed viability. Seeds are considered viable if they stain red when treated with TZ. However, accurate interpretation of the TZ test results depends on a good knowledge of seed structure and seed germination.

Photo: Wikipedia encyclopaedia

Seed viability—a cautionary tale

By David Carr

In 2008 The Border Rivers Gwydir CMA and Greening Australia conducted trials of large scale direct seeding using agricultural seeders in the Moree district of NSW.

Seed for the trials was obtained by tender from 8 different seed suppliers including both professional and amateur collectors. As part of the trial process, all seed batches were tested for viability using a tetrazolium test.

The results were alarming. Of the 30 seedlots obtained, 4 had zero viability and a further 8 had less than 50% viability. If these had been sown in the paddock, one third of the effort of seeding would have been wasted with little or no germination resulting.

One seedlot of river red gum (*Eucalyptus camaldulensis*) had zero viability and made up most of

the seed mix for one site. Sowing this mix would have resulted in a bare site that would need reseeded. The cause of the low viability is likely to be collecting immature seed, collecting poor quality seed from small isolated populations and/or from poor storage practice.

Interestingly, both professional and amateur collectors provided seedlots that had serious viability problems.

This article first appeared in 2008 in Greening Australia's Thinking Bush series in an edition called There's more to seed than local provenance.

It has been reprinted here with the permission of David Carr

References

Carr, D. (2008), *There's more to seed than local provenance*. Thinking Bush Series, Greening Australia. [Available online here](http://www.thinkingbush.com.au/splash.html)

Seed Fill-Making the cut

The term 'seed fill' describes what proportion of a seed has intact embryo and endosperm.

For many species this can be determined by cutting the seeds in half with a scalpel and examining them with a hand lens or under a dissecting microscope. The endosperm tissue in viable seeds is usually firm and white.



Cut test of *Leptosperma myrsinoides* indicating 95% viability.

Photo provided by the South Australian Seed Conservation Center

<http://saseedbank.com.au/splash.html>

Taraxacum cygnorum – Coast Dandelion – Not your average threatened species

By David Pitts, Department of Environment & Primary Industries, Heywood.

Taking up the position of Threatened Flora Project Officer in October 2008 for Victoria's south west came with some trepidation, particularly when it came to familiarising myself with the suite of threatened species encompassed within the project. Sure, there was a great range of data for many of the species such as the Mellblom's Spider-orchid, Gorae Leek-orchid and Wrinkled Cassinia, but there was one species that was all but unknown apart from some 1980s information from the Lower Glenelg National Park, near Nelson. I had to ask myself – why? Was it because, as the literature suggested, it's a species very difficult to distinguish from your average garden weed? Or perhaps it was not considered attractive enough to really capture ones attention. Whatever the reason I decided that the Coast Dandelion was a species that deserved more attention so I took it upon myself to find out more – and exactly that I did.

But before I get into the specifics I should mention a bit more about the plant itself. The Coast Dandelion, *Taraxacum cygnorum* to some, is a small perennial herb that belongs to the daisy family. First collected in the 1840s from Western Australia's Swan District, as the name *cygnorum* implies, the Coast Dandelion was subsequently collected from the Bass Strait Isles of Flinders, King and Seal shortly after this time. By the mid-19th century the Coast Dandelion was lost or forgotten and presumed extinct. Fast forward over 125 years and remarkably the Coast Dandelion was rediscovered in the 1980s in the Lower Glenelg National Park in Victoria's south west by Melbourne botanist and threatened flora expert, Neville Scarlett.

Coming back to the present century now – to early summer of 2010 when I was conducting a targeted survey for the Coast Dandelion in the Lower Glenelg National Park area north of Nelson with a close friend and fellow naturalist Karl Just. A few hours into the survey we came across a dandelion seed head, completely exposed to the winds mercy. This dandelion was unlike the other typical garden variety we were used to; it was different, much more petite with a thinner leaf completely free of hairs and less pronounced marginal teeth. At the time, I recall thinking to myself, could this be it, could this be the Coast Dandelion, the plant that has too often been lumped into the too-hard basket? With the seed ripe for picking, we collected several seeds without hesitation, knowing that this mature reproductive material was one of the diagnostic features required for accurate identification.

Later that day, having thoroughly examined the seed under the microscope, both Karl and I were quietly confident that the day's search was a success. The following day the seed was posted to the Melbourne Herbarium to get final confirmation. Several days had passed before a response was received, confirming the seed belonged to the Coast Dandelion.

Four years on and the Coast Dandelion now rivals the other threatened flora species. It has over three years' worth of demographic monitoring data, it has received some timely on-ground management to remove pines and coast wattle from nearby the site, it has been successfully cultivated and seed has been given to the Melbourne Herbarium for the Millennium Seed Bank Conservation Project.

This couldn't have been achieved without the support of the Victorian De-



Coast Dandelion (*Taraxacum cygnorum*) which is listed as endangered in Victoria

partment and Environment & Primary Industries, Parks Victoria, the Melbourne Herbarium, the Glenelg Hopkins Catchment Management Authority and the federal governments Caring for our Country Program. Ongoing threat mitigation and monitoring of this species is continuing which will assist with understanding more about the ecology and biology of this threatened species and help us conserve it into the future.

For further information on the Coast Dandelion please contact David Pitts at the Department of Environment and Primary Industries, Heywood, Victoria on 03 5527 0422 or david.pitts@depi.vic.gov.au

Portland Display Garden Underway

Plans are well underway for a Display garden in Portland. The Cross-Border Community Nursery is partnering with the Portland Community Garden Landcare, (PCGL) South



Left to right, Gary Milich, (SWCAN) David Pitts (Threatened Flora Project Officer DEPI) & Wayne Barrett (PCGL) recently met at the Display Garden site in Portland to plan landscaping and threatened species selection for the garden.

West Coast Action Network (SWCAN) local aboriginal groups & local Council to develop a garden showcasing the areas threatened flora.

The garden will be part of the Portland Community Garden Complex on Henty Street and is one of eight being developed with communities on both sides of the border.

Seed germinates after 200 years

There are some pretty amazing claims about the germination of seeds that have remained dormant for thousands of years. An example is the so called "Mummy's Peas" which were claimed to have been successfully grown from seed found in the 3000 year old tomb of King Tutankhamen.

However, a rigorous examination by botanists at Kew Gardens in London has raised serious doubts about their claimed antiquity. Nonetheless, while these botanists are sceptical about the age of seed allegedly from King Tut's tomb, they were very excited by the recent discovery of some viable seeds that were collected by a Dutch Merchant 200 years ago.

The merchant was Jan Teerlink who, while bringing a cargo of tea and silk from the East Indies and China in 1803, stopped off at the Cape of Good Hope where he collected the seeds of some native plants.

Shortly after departing the Cape his ship was captured by a British naval Privateer and his possessions, including a red, leather bound notebook containing the seeds he'd collected, were passed on to the British Admiralty, and then to the Tower of London.

Two hundred years later, researcher, Roelof van Gelder, found Teerlink's notebook in files held at the National Archives of Kew in London. The notebook contained 40 small packets containing seed of 32 different species.

Amazingly, botanists from Kew's Millennium Seed Bank were able to propagate many of these species by carefully simulating the conditions occurring in their native habitat.



A species of *Leucospermum* grown from seed collected by Jan Teerlink 200 years ago. Photo sourced from Wikipedia encyclopaedia

Reference

You can read the original story about Jan Teerlink's seeds by clicking on the following link: <http://www.kew.org/news/200-year-old-seeds.htm>

Just a Minute with....

YVONNE RILEY

When did your interest in native plants begin?

I have always had 2 loves in my life (other than my family) my art and native plants, which are closely intertwined.

Whilst most of my training has been in the arts, in 2010, I completed a Diploma in Conservation and Land Management at Charles Darwin University, to fulfil a long term ambition, and extend my knowledge further. I have worked closely with Aboriginal people "on country" and learnt the food, medicinal and tool values of our native plants, from the tropics to the deserts. I have a great respect for their knowledge, culture and diversity.

What do you find most enjoyable about working with plants

I enjoy putting my green thumbs to good use. Gathering wild seed, germinating and revegetating is a positive way of caring for country and giving something back to the environment. It's something I feel passionate about.

What do you feel is your most positive contribution to the natural environment?

As an Eco tour operator and trainer promoting sustainable tourism. Interpreting and respecting culture, history and the natural values of the Australian landscape. Many years ago I lobbied the S.A. government for the sewerage treatment plant at Finger Point.

Is there anything that annoys you about the way we care for the natural environment ?

I don't like the way in which introduced plant species have been allowed to take over the Lakes area in Mount Gambier. The Lakes could be used to showcase our native flora and what makes this area unique. In my experience, this is what attracts tourists.



PROFILE

Yvonne was raised in the Mount Gambier area, has been a lecturer in fine art, & spent 15 years working as tour operator in the Kimberley, Kakadu & Uluru before returning to Mount Gambier 3 years ago.

Yvonne is currently working as an Internee in our Nursery, helping out with seed cleaning, testing & propagation trials.

The Bush

James L. Cuthbertson

Give us from dawn to dark
Blue of Australian skies,
Let there be none to mark
Where our pathway lies.

Give us when noontide comes
Rest in the woodland free—
Fragrant breath of the gums,
Cold, sweet scent of the sea.

Give us the wattle's gold
And the dew-laden air,
And the loveliness bold
Loneliest landscapes wear.

These are the haunts we love,
Glad with enchanted hours,
Bright as the heavens above,
Fresh as the wild bush flowers

James Cuthbertson was a poet & school teacher. He was born in Scotland in 1851 and died in Mount Gambier in 1910

Nature Glenelg Trust



The **Plant Press** is produced by the Nature Glenelg Trust's, Cross-Border Community Nursery & Seed Collections Project. Funding for this project is provided by the Australian Government.

Detailed information about the Cross-Border Community Nursery Project and other NGT projects can be accessed via the following link: <http://natureglenelg.org.au/> For further information about the Cross-Border Nursery Project Contact:

Ken Baker

Mob: 0437597685 Email: ken.baker@natureglenelg.org.au

PO BOX 2177, Mount Gambier, SA 5290

Disclaimer The articles and links in this Newsletter are provided as a service to recipients. The existence of a link to another site or resource does not constitute a recommendation or endorsement of that site or resource. Neither Nature Glenelg Trust or the editor of Plant Press is liable for any information at any of the sites linked to in this Newsletter. If you think a link, description, site, piece of advice or anything else mentioned here is inappropriate, please let me know and I will endeavour to correct it where necessary.

