

May 2005



What's been happening ...

This is the first newsletter of the Seeds for Life project. It brings together news of the major developments, highlights interesting sub-projects and provides tips and tools for Collection Partners. We hope you will be able to enjoy it in a spare, relaxing moment ...



On the World Wide Web

Seeds for Life is live on the World Wide Web, hosted on the Greening Australia Queensland website at www.greeningaustralia.org.au/GA/QLD/EandT/sfl

A visit to the website can tell you the collections made in each sub-project around the state, workshop schedules, or contact details for research personnel.

Endangered cave fern

Investigation into the collection and seed-banking of *Tectaria devexa*, an endangered fern from the Rockhampton area is underway after the Fitzroy Basin Association approached Seeds for Life. The fern is susceptible to local extinction as a result of gradual loss of vigour or a single catastrophe.

Advanced Seed Collection workshops

Following on from the pilot workshop held in November last year in Brisbane, a new improved Advanced Seed Collection workshop was held in Glenmorgan on 15-16 April, 2005.

The workshops focus on how to collect and handle seed to international research standards. The skills learnt over the two days of the workshop span planning, sampling strategies (covering topics such as seed maturity and genetic sampling), collection, curation (cleaning, cut tests and seed counts), post-seed handling, drying, and storage.

Right: Collection Partners at Myall Park Botanic Garden, Glenmorgan at the April workshop.

Workshops are being planned for Charleville, Cairns, Mackay, Mount Isa and Townsville, with the next one to be held at Yeppoon on 27-28 May.

Further workshops will be organised on request. We are happy to run an Advanced Seed Collection workshop in a regional centre or nominated venue, where a number of groups or individuals in a local network are keen to be involved.

And, if individuals can't make it to a workshop, but would still like to be part of the project, they can receive a Seeds for Life seed collection kit detailing everything they need to know to be involved.

Contact Seeds for Life

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The next newsletter is planned for September 2005. Send in your quick updates, short articles, or photos to Seeds for Life.

One permit fits all

We are currently in the process of applying for a Scientific Purposes Permit from Ecoaccess, part of the Environmental Protection Agency. Once approved, this will be our permit for the entire Seeds for Life project. The simple ground rules are:

1. Each collector carries an endorsed copy of the permit while collecting
2. Collectors must contact landholders one week beforehand (this applies to all collection sites, not just those listed on the permit)
3. Collectors will follow the Millennium Seed Bank Code.

Stradbroke Island collection weekend

After the last field collection day with Phillip Trendell, Cali Salzmann and friends, it was decided that another more extended visit should be planned! Phillip (Redland Shire Council Bushcare Officer and Collection Partner) has nominated late October as a very good time to go back.

We can target the Wildflower Refuge and Brown Lake again, as well as visit the seed bank set-up at Consolidated Rutile, and with luck, collect with Peter from the mining company on their leasehold. There will be overnight beach camping at Point Lookout. All welcome!

A field day may also be organised at Flinders Peak and White Rock Conservation Areas, Ipswich, in September.

Is it orthodox?

Check out the MSB Seeds Information Database for known seed storage behaviour at

www.kew.org/data/sid/sidsearch.html

A seed desiccation test can be done for species to test if the seed is orthodox or recalcitrant.

A test on *Arytera divaracata* has indicated its recalcitrant behaviour, i.e. not suitable for collection and seed banking under conventional conditions.

Dormancy research

Diane Akers, Lass O'Gowrie Nursery at Charleville has identified gidgee *Acacia cambagei* for dormancy research at the University of Queensland. Diane has found that a population of gidgee at Longreach is easier to germinate, even after a period of short-term storage, while the remaining populations are difficult to germinate unless very fresh seed is used. Gemma Hoyle, at the University of Queensland, will be undertaking the dormancy study once collections are available. She will compare the germination behaviour at two different populations and develop germination and propagation protocols for this species. This will have important repercussions for its use in landscape rehabilitation.

Calling all seed collectors ...

Are you interested in collecting target species as part of the Seeds for Life dormancy project?

Gemma Hoyle, University of Queensland, is looking for collections from different populations and climatic regions of the forbs *Goodenia fascicularis* and *Actinobole uliginosum*.

Those wishing to know more and see the collecting protocol can contact a very grateful Gemma Hoyle at g.hoyle1@uq.edu.au or phone 3346 9547.

What to collect?

Simply nominate the species you are interested in for crosschecking (existing species seed bank, known seed storage behaviour) prior to collection.

You can plan ahead and nominate target species. We will provide whatever support you may need, e.g. location maps of your target species.



Seed laboratory opens

The Brisbane Botanic Gardens, Mt Coot-tha will officially open their recently completed Seed Laboratory on Wednesday 11 May 2005. The unveiling will be performed by Dr Robin Probert, Head of Technology and Training at Kew's Millennium Seed Bank, (MSB), United Kingdom.

The laboratory will serve as a drying, processing and storage facility, as well as an adjunct research facility for collections made by Brisbane Botanic Gardens, for the Seeds for Life (SfL) project.

On the 4 May 2005, the first batch of seeds were sent to the MSB, consisting of collections made in South-East Queensland. They will be stored at their state-of-the-art facilities with a duplicate collection to be held in storage at the Brisbane Botanic Gardens.

Apart from the purpose of ex-situ conservation, these collections will be used to undertake research into issues relating to seed longevity, germination viability and cryopreservation as part of project 1 of the SfL project — Griffith University/Brisbane Botanic Gardens contribution.

Threatened species collections

The Brisbane Botanic Gardens (Project 1) is principally collecting species that are either threatened or occurring in threatened regional ecosystems.

Collection partners who have knowledge and experience with threatened species are working with the Brisbane Botanic Gardens staff. Their input ensures threatened species in their local area are included in this collection program. They are passing on vital information on species, locations, and seeding times.



Left: Mountain she-oak
Allocasuarina emuina.
Endangered: occurs only on
the Queensland's Sunshine
Coast.

The *Allocasuarina emuina*
Recovery Team is assisting
Brisbane Botanic Gardens
staff to collect this species.



Above: Silica gel seed drying in airtight plastic tubs. Seed in aerated cloth bags is placed on a rack above a layer of silica gel. A data logger is used to monitor the temperature and relative humidity of the enclosed environment. Once the seed has dried down to a low moisture content it can be processed further (cleaned, tested, and stored).

Voucher specimens

Plant samples taken to verify the seed lots will be incorporated into the Queensland Herbarium permanent collection as a voucher specimen. Information provided on the MSB field data sheet will become the label data for the specimen to be entered into a database, HERBRECS.

Incoming plant specimens for the collections are dried, mounted, labelled, and then sterilised by a freezing procedure before being filed in the main herbarium.

The Queensland Herbarium's 700 000 plant specimens form the basis for our knowledge of the state's flora.



Left: Specimens collected by
Banks and Solander from the
Endeavour River, Cook's
voyage, 1770.

Source: Queensland
Herbarium

Seed collected so far ...

Genus	Species	
Actinobole	uliginosum	2
Alphitonia	petrei	3
Amphipogon	caricinus	2
Ancistrachne	uncinulata	3
Angophora	woodsiana	1
Araucaria	cunninghamii	3
Aristida	caput-medusa	3
Aristida	gracilipes	3
Aristida	ramosa	3
Baeckea	frutescens	1
Baeckea	imbricata	1
Baloskion	pallens	1
Baloskion	tetraphyllum	3
Banksia	aemula	3
Baumea	rubiginosa	3
Brachyscome	melanocarpa	2
Cadellia	pentastylis	2
Calandrinia	balonensis	2
Calotis	cuneata	2
Calotis	cuneifolia	2
Camptacra	barbata	2
Cymbopogon	obtectus	2
Cymbopogon	refractus	2
Cyperus	haspan	1
Cyperus	polystachyos	1
Cyperus	trinervis	1
Dodonaea	sinuolata	2
Dodonaea	triquetra	1
Elaeocarpus	reticulatus	1
Eleocharis	acuta	1
Enneapogon	polyphyllus	2
Eragrostis	interrupta	3
Eucalyptus	curtisii	1
Eurychorda	complanata	1
Fimbristylis	dichotoma	1
Fimbristylis	pauciflora	1
Gahnia	sieberiana	1
Geitonoplesium	cymosum	1
Glossocardia	bidens	3
Goodenia	fascicularis	2
Heteropogon	contortus	2
Hovea	acutifolia	1
Leiocarpa	brevicompta	2
Leptospermum	whitei	3
Melaleuca	nodosa	3
Minuria	integerrima	2
Paspalum	caespitosum	3
Petalostigma	triloculare	1
Petrophile	canescens	3
Philydrum	lanuginosum	3
Plantago	cunninghamii	1
Podolepis	longipedata	1
Ptilotus	leucocoma	2
Rhodanthe	moschata	1
Rhynchospora	corymbosa	1
Schoenoplectus	mucronatus	1
Schoenus	calostachys	3
Senna	artemisioides	2
Senna	barclayana	3
Senna	circinnate	2

Sporandanthus	caudatus	1
Stephania	japonica	1
Strangea	linearis	1
Toona	ciliata	3
Trachymene	incisa	3
Trema	tomentosa	1
Triodia	mitchellii	2
Wahlenbergia	tumidifruca	2
Xerochrysum	brachteatum	2
Xyris	complanata	3
Xyris	juncea	3

Seed to be targeted ...

Genus	Species	
Acacia	penninervis	3
Acacia	ulicifolia	3
Aotus	lanigera	1
Baeckea	diosmifolia	1
Baeckea	linifolia	1
Baloskion	tenuiculme	1
Banksia	oblongifolia	1
Banksia	robur	1
Banksia	integrifolia	3
Banksia	serrata	3
Banksia	spinulosa	3
Baumea	acuta	1
Baumea	arthrophylla	1
Baumea	gunnii	1
Baumea	juncea	1
Baumea	muelleri	1
Baumea	nuda	1
Baumea	teretifolia	1
Boronia	rosmarinifolia	3
Brachiaria	mutica	1
Callistemon	pachyphyllus	3
Chorizandra	sphaerocephala	1
Conospermum	taxifolium	3
Daviesia	villifera	3
Drosera	binata	1
Eleocharis	atricha	1
Eleocharis	dietrichiana	1
Eleocharis	difformis	1
Eleocharis	geniculata	1
Eleocharis	minuta	1
Eleocharis	ochrostachys	1
Eleocharis	philippinensis	1
Eleocharis	plana	1
Eleocharis	pusilla	1
Eleocharis	sphacelata	1
Empodisma	minus	1
Epacris	microphylla	1
Epacris	obtusifolia	1
Gonocarpus	micranthus	3
Goodenia	bellidifolia	3
Goodenia	paniculata	3

Hibbertia	stricta	3
Hibbertia	vestita	3
Homoranthus	virgatus	3
Hypolaena	fastigiata	1
Ischaemum	australe	1
Lepironia	articulata	1
Leptocarpus	tenax	1
Leptospermum	laevigatum	1
Leptospermum	lamellatum	1
Leptospermum	luehmannii	1
Leptospermum	microcarpum	1
Leptospermum	neglectum	1
Leptospermum	oreophilum	1
Lepyrodia	scariosa	1
Leucopogon	leptospermoides	3
Leucopogon	virgatus	3
Melastoma	affine	1
Paspalum	longifolium	1
Paspalum	mandiocanum	1
Paspalum	oligostachyum	1
Patersonia	fragilis	1
Patersonia	glabrata	1
Patersonia	sericea	1
Persoonia	virgata	1
Petrophile	shirleyae	3
Phebalium	woombye	3
Phyllota	phylicoides	1
Platysace	ericoides	3
Pultenaea	euchila	3
Pultenaea	retusa	3
Ricinocarpus	pinifolius	3
Schoenus	apogon	1
Schoenus	brevifolius	1
Schoenus	ericetorum	1
Schoenus	falcatus	1
Schoenus	kennyi	1
Schoenus	lepidosperma	1
Schoenus	maschalinus	1
Schoenus	melanostachys	1
Schoenus	nitens	1
Schoenus	ornithopodioides	1
Schoenus	paludosus	1
Schoenus	scabripes	1
Schoenus	sparteus	1
Schoenus	vaginatus	1
Schoenus	villosus	1
Schoenus	yarrabensis	1
Sowerbaea	juncea	1
Sprengelia	sprengelioides	3
Stylidium	debile	3
Stylidium	graminifolium	3
Thelionema	caespitosum	3
Triglochin	procerum	1
Typha	orientalis	1
Wedelia	biflora	3
Woollisia	pungens	1
Xanthorrhoea	fulva	1
Zieria	laxifolia	3