

Project Update - March 2011 to June 2011

(This project update is a summary of the NZDFI SFF progress report to MAF for this period.
A full copy of this report is available on request.)

Durable eucalypt breeding population establishment and assessment

The early assessment of survival and height growth has been completed of all surviving trees within the three *E. bosistoana* breeding trials planted in 2009.

Survival was best at Lawson site which was 99%. However, there was some evidence of sawfly damage to foliage. There are also some large differences in growth rates of the trees growing on the two different aspects within this site.

A significant area of the trial at the MDC Cravens Road was damaged by frost. Winter records taken at the Marlborough Research Centre climate station in Blenheim for last year show temperatures as low as -6.2 degrees C. Some families have shown an excellent ability to coppice after frosting damage.

The Martins site has had significant losses due to water-logging throughout winter. The 2010 annual rainfall was recorded by Proseed (9 kms from the site) as being 2800mm – 4x times greater than the long term average of 750 mm.

Results of this first assessment are being analysed by Dr Luis Apiolaza to provide an early evaluation of all families. He plans to present this analysis at the UoC sponsored durable eucalypt workshop being held in Blenheim (more info <http://www.nzdfi.org.nz/workshop.php>).

A survival assessment has been completed of the all *E. bosistoana* and *E. argopholia* breeding populations planted in 2010 and there is 95-100% survival across all trials. A warm and wet autumn and early winter have ensured excellent growth in the past 4 months. It's positively green at the Avery's property, Bonavaree in south Marlborough.



Photo 1: *E. bosistoana* 9 months following planting on Bonavaree.

Labelling and sorting is underway of our 30,000 *E. globoidea* seedlings growing at Morgans Road Nursery. These will be planted in three breeding populations this year. Also, 6,000 *E. quadrangulata* seedlings will be planted at 4 sites and another 1,500 *E. tricarpa* seedlings to be planted at 3 sites. 4,000 *E. argophloia* seedlings have also been propagated by Dean Satchell for planting at 3 sites.

Consultation with supporting landowners to secure sites for this year is almost complete.

Landowners that have confirmed sites for NZDFI breeding populations include:

- Ben McNeill at Waimarama, Hawkes Bay.
- Montfort Trimble Foundation at Rewanui Farm Park, Central Wairarapa.
- Avery family at Bonavaree, South Marlborough.
- Martin's in North Canterbury.
- Ian and Heather Atkinson, Southern Wairarapa.
- John and Robyn Cuddon at Wentworth, South Marlborough.
- David Dillon at the Throne, South Marlborough.
- Junken Nissho Ltd at Ngamu forest, Central Wairarapa.

A big thanks to all these landowners!



Photo 2: Inspecting the *E. globoidea* breeding population trial site with Heather Atkinson, south Wairarapa

Demonstration trial establishment

All three demonstration trials planted last year are now well established with survival 95-100% and also benefiting from a warm, wet autumn. These are located at Bob Wishart and Meg Gaddum's property north of Gisborne, Clive Paton's property in southern Wairarapa and the Avery's property in south Marlborough.

Over 18,000 seedlings have also been graded and labelled for planting at 12 regional demonstration trials that include up to 11 different species of durable eucalypts. Sites for these demonstration trials have all been secured with landowners located in NZ's east coast regions of Bay of Plenty to North Canterbury.

Landowners that have confirmed a site for planting a demonstration trial include:

- Tect Park on SH 36 between Tauranga and Rotorua.
- Bob Wishart and Meg Gaddum at Te Koawa, Gisborne.
- Junken Nissho Ltd at Totara forest, Gisborne.
- Rick Alexander in Central Hawkes Bay.
- Ben McNeill at Waimarama, Coastal Hawkes Bay.
- NZ Forestry Ltd at Birch Hill, North Wairarapa.
- Montfort Trimble Foundation at Rewanui Farm Park, Central Wairarapa.
- Junken Nissho Ltd at Ngamu forest in Central Wairarapa.
- Clive Paton in South Wairarapa.
- David Dillon at the Throne, South Marlborough.
- Christo Saggars at Ben Morven, South Marlborough.
- Marlborough Lines at Wakamarina Valley, North Marlborough.
- Martin's in North Canterbury.

Another big thanks to these landowners!



Photo 3: Ruth McConnochie in early morning discussion Sean McBride and other JNL staff about site prep in pine cutover for a demonstration trial planting at Ngamu forest in central Wairarapa.

Trees being grown for wood quality study at Harewood nursery

There has been excellent growth on some of the 200 *E. bosistoana* and 40 *E. argophloia* seedlings bagged up last year at Harewood nursery – despite the earthquakes!

These are being grown on by the School of Forestry for preliminary wood evaluation. They also provide the opportunity to record growth rates of different families and to incorporate this data in our early genetic analysis of both these species.



Photo 4: Inspecting *E. bosistoana* at Harewood nursery – 10 months following being bagged up by School of Forestry.



Photo 5: *E. argophloia* at Harewood nursery – 10 months following being bagged up by School of Forestry.

E. globoidea and E. bosistoana coppice/vegetative propagation research

In April, coppicing shoots were cut from the stumps of over fifty 5 year old *E. bosistoana* and *E. globoidea* that had been felled last spring in the Waikakaho valley trials in the Marlborough Regional Forests last spring. These are being evaluated by SCION for vegetative propagation with the support of FFR.

2011 Annual NZDFI SFF Project Management Committee meeting held on 23rd May

The annual meeting of the NZDFI SFF Project Management Committee was held at 2.00pm on Monday 23rd May at the Marlborough Research Centre. This included presentations on the work programme completed from 1st July until 30th April as well as the programme planned for the next twelve months.

Minutes from this meeting are attached as Appendix 1 to this update.

Extension programme

A field day talk about the NZDFI was given to NZ Farm Forestry Association conference attendees on 13th April 2011 at the durable eucalypt trial planted on the Homebush property near Masterton. This trial is a successful local initiative to test durable eucalypt species.

Registration forms are now available on line for the **NZDFI/School of Forestry professional workshop and field trip titled ‘Developing a Eucalypt Resource’** to be held 3rd & 4th November 2011 at the Marlborough Research Centre in Blenheim. Professor John Walker, our workshop co coordinator, outlines below why you should attend.

“The Blenheim workshop will focus on reviewing the best practice and knowledge of how to introduce and establish a new eucalypt species in forests outside their natural habitat. Many of the speakers have researched and consulted internationally on different aspects of eucalypt tree breeding, propagation and physiology.

Historically, New Zealand has trialled a huge range of eucalypts, but many introductions were of limited or unknown provenance. Few growers appreciated the art of species selection and siting - relying rather on trial and error – and planted many species with both success and failure. Much has been learnt (and forgotten). Our failure to develop a large eucalypt estate is in stark contrast to other Southern Hemisphere countries, both in temperate and sub-tropical regions. The usual litany of pests and diseases and our proximity to Australia are part of the explanation for past disappointments. This workshop acknowledges such risks and places much emphasis on getting the right breeding material, deploying it correctly to optimal biogeo-climatic niches thereby keeping on top of possible pests and diseases.

Most eucalypt plantations involve very high biomass productivity (either for pulp or energy production) in which New Zealand is unlikely to have a competitive advantage. However, around the world there has been less progress with solid wood products and therein lies an opportunity. Whereas these risks are the same as for growing pulpwood or framing timber, the rewards in growing elite and beautiful hardwoods are much greater.

The Marlborough Research Centre and New Zealand Dryland Forest Initiative (NZDFI) have a particular interest in this workshop, seeing a mosaic of woodlots on pastoral drylands supplying initially a mix of naturally-durable posts and poles for local vineyards etc and subsequently high-valued sawlogs. Their vision is for New Zealand to be a world leader in breeding eucalypts adapted to drylands and which produce naturally durable hardwood.



Starting in Marlborough in 2009, NZDFI began establishing a diverse genetic resource for tree improvement and researching sustainable management systems to successfully grow durable eucalypt for solid wood products.

*Thursday's eucalypt research workshop will include ten speakers with presentations that will cover eucalypt genetics and breeding; successful propagation and siting of eucalypts as well as managing biotic risks. The field trip on Friday is an opportunity to examine the local efforts to do just that with a visit to the Awatere Valley to see one of NZDFI's three sites established in 2009 with a single-tree base population of *E. bosistoana*. There is also a visit to durable eucalypt species trials planted in 2005 adjacent to the Wairau River. The field trip will allow for attendees to ask questions and hear the responses and discussion of unbiased international experts.*

This is intended to be a stimulating workshop to encourage the sharing of knowledge and innovative ideas that is rigorous without be overly learned. It is offered broadly to nursery staff, farm-foresters and regional land managers – and researchers.

However there will not be time to explore, except incidentally, the role that eucalypts can play in broader land management practices, for example the role of plantings as shelter for livestock, to improve soil and water values, add biodiversity values etc. and for C-sequestration and as alternative income sources for land owners and local communities."

The eucalypt workshop/field trip registration fee is \$135 (including GST). This includes both lunch and dinner on Thursday and lunch and bus transport on Friday.

The lecture theatre at the Marlborough Research Centre Trust seats a maximum of 100 people so register early to avoid disappointment.

For more information go to <http://www.nzdfi.org.nz/workshop.php>

Or contact Maree Way mareew@winereseach.co.nz

Marlborough Research Centre,
85 Budget Street,
Private Bag 1007
Blenheim 7240

Enquiries: Ph: + 64 3 577 2395
Fax: + 64 3 577 9298

Being located in Blenheim, this could be an opportunity to visit to see and enjoy Marlborough's famous wine regions. For further information www.lovemarlborough.co.nz



Appendix One:

Minutes from NZDFI Project Management Committee meeting held on 23rd May 2011 at Marlborough Wine Research Centre, Budge Street, Blenheim.

Present:

Shaf van Ballekom	Chairman, Proseed
Kevan Buck	NZDFI Secretary
Paul Millen	NZDFI Project Mgr
Sophie Preece	NZDFI Media liaison
Janine Alfeld	MAF SFF Advisor
Jo Buckner	MAF
John Walker	School of Forestry
Ruth McConnochie	Consultant
Ash Millen	Vineyard Timbers
Geoff Hoare	Marlborough Lines
Doug Avery	Landowner rep
Alan Johnson	MDC
Nicky Eade	MDC

Apologies:

Gerald Hope	Deputy Chair
Luis Apiolaza	School of Forestry
Euan Mason	School of Forestry
Patrick Milne	NZFFA
Gary Fleming	Landowner rep
Ian Nicholas	
Rob Lawrence	PF Olsen
Andrew Naylor	Pernod Ricard
Angus Gordon	NZFFA
Russell Dale	Future Forests
Heather and Ian Atkinson	Landowners
David Dillon	MTGA
Colin Ross	Organic Winegrowers

Approval of Minutes from meeting held 31st May 2010

Motion: That minutes of 31st May 2010 be approved

Moved: Paul Millen Seconded: Ruth McConnochie Carried

Matters Arising

No matters arising

Chairman's Report Including Update on Seed Collection

Shaf van Ballekom gave an introduction and advised that he would circulate a written Chairman's report at the end of the financial year. He then gave an update on seed collection for the NZDFI. In 2010 seed collection had focussed principally on *E. globoidea*, with 164 families collected. It was a very poor year for *E. quadrangulata* seed so only 20 families had been obtained by purchase from CSIRO. In addition, small numbers of families and seed were obtained for

tricarpa, argopholia and camaldulensis. 2011 seed collection will focus on more families of bosistoana, quadrangulata, tricarpa and argophloia.

Review of 2010-2011 R&D Programme

Ruth McConnochie gave an update on the R&D programme for 2010-2011. 2009 plantings have had an assessment at age 18 months for tree height and survival. Preliminary results were reported with further detailed analysis to be completed and possibly published by end of this year.

Paul Millen reviewed the extension programme from 1st July 2010 to 30th April 2011. An information brochure outlining the NZDFI programme has been developed. Various other articles/publications have been published. NZDFI has attracted the involvement of Bay of Plenty Regional Council. NZDFI has also developed links with other research programmes including FFR/SCION eucalypt propagation programme.

NZDFI 2011- 2013 Financial Plan

Kevan Buck gave an update on the NZDFI financial plan. NZDFI have received additional funds above than budgeted including \$15,000 from BoP programme. There is substantial expenditure planned in the next 5 months and a request for an advance of funds will be made to SFF. Otherwise revenue/expenditure is on track to finish close to budget at the end of the project in June 2013.

Plan for 2011-13 R&D Programme

Paul and Ruth gave a presentation describing the ongoing research programme. Trials are located along the East Coast of New Zealand from Canterbury to Gisborne. Legal agreements are in place for the trials to allow access and retain ownership of germplasm with NZDFI. Paul noted the importance of the landowners to this project.

Growth and Yield Modelling R&D Programme Proposal

Paul Millen gave a presentation describing a proposed project covering growth and yield modelling. This project is being developed in conjunction with Euan Mason, School of Forestry. Outcome from this project would be a model(s) that would be used to predict tree growth over time on a variety of sites.

Next Meeting

To be finalized.

The meeting closed at 3.30pm.

