NZDFI NEW ZEALAND DRYLAND FORESTS INITIATIVE
breeding tomorrow's trees today

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Project Update - November 2011 to February 2012

(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

Site visits were completed in January and February to check weed control within the new durable eucalypt breeding populations with most sites needing immediate release spraying due to the unusually wet summer season.

This season has highlighted the benefit of using pre plant spot spray that includes terbuthylazine for residual control when planting into grass, and ensuring planting spots be a minimum of 70 cm diameter circle. Also, that summer release spraying may be necessary and that non residual chemicals are best used, for example, haloxyfop for grass and clopyralid for thistles, flat weeds and legumes.

During the site visits, survival counts and measurements of early height growth have been taken and these are being collated and will be reported in the next project update.

Proseed was successful last year in collecting seed for another 85 families of *E. bosistoana* that was sown by Morgans Road Nursery to produce seedlings for planting this year. This will extend our breeding populations of this species to over 150 families. Also, seedlings have been propagated from improved seed of *E. cladocalyx* and *E. camaldulensis* that are planned for planting in several mass selection trials that will also provide a basis for improved NZ landraces of these species.

Sites for these additional plantings are being negotiated with landowners located in Hawkes Bay, Wairarapa and Marlborough and Canterbury.

Demonstration trial establishment

Site visits were also undertaken during January and February to check weed control within the new demonstration eucalypt trials. As with the breeding populations, most sites have needed immediate release spraying. Some early form pruning was undertaken during these visits.

Trees being grown for wood quality study at Harewood nursery

The *E. argophloia* and *E. bosistoana* seedlings that were planted in Sept 2010 are now of sufficient size to be cut down and the wood assessed – primarily for growth stress variation. Others plan to take coppice shoots from the lignotubers for propagation studies and to assess coppicing response on felling. It is likely that these trees will be cut in October, with the growth stress data being available by the end of 2012.

SUPPORTERS: Marlborough Research Centre, Sustainable Farming Fund, UC University of Canterbury, PROSEED, Vineyard Timbers Ltd, Marlborough Lines, AGMARDT, New Zealand Farm Forestry Association, Marlborough District Council, Gisborne District Council, greater Wellington Regional Council, Hawke's Bay Regional Council, Environment Canterbury Regional Council, Bay of Plenty Regional Council

Forestry student research projects

Mitch Haberkorn and Ben Morrow are the University of Canterbury (UoC)'s two summer scholarship under graduate forestry students that are working on projects linked to the NZDFI research programme. NZDFI assisted these students when they visited Marlborough in November-December to establish 10 PSP sites in 5-8 year old trials of *E. bosistoana* and *E. globoidea.* They also destructively sampled 21 trees of 8 year old *E. bosistoana* across three sites in Marlborough for early wood quality research.

UoC also supported Mitch with travel to the Bay of Plenty so he could work with Ian Nicholas to measure several *E. globoidea* PSP's in BoP as he is working on the development of growth and yield model for *E. globoidea.*

Meanwhile, Irene Adu Oparah is the masters forestry student working on tree physiology. She has completed her measurements of the optimal temperatures for photosynthesis for a number of diverse forestry species including a number of NZDFI species.

Once they have all completed their studies, their reports will be made available to NZDFI and their supporters.

Mitch Haberkorn using a relascope to measure upper stem diameters in 8 year old *E. bosistoana.*

Ben Morrow marking up an 8 year old *E. globoidea* tree for measurement within a new permanent sample plot.

Extension programme

'Developing a Eucalypt Resource' workshop held 3rd and 4th November 2011

The University of Canterbury sponsored the professional workshop and field trip titled 'Developing a Eucalypt Resource: Learning from Australia and elsewhere' that was successfully held 3rd & 4th November 2011 at the Marlborough Research Centre in Blenheim. This was attended by 60 people including the 13 speakers who were all Australian based scientists and professionals.

The first day was held within MRC's lecture theatre where the speakers gave presentations and, shared their knowledge of many eucalypt species and the research that they had conducted. They responded to a wide range of questions raised by the workshop participants and provided insights as to the challenges and issues the NZDFI faces to successfully breed our selected durable species so that they can be planted commercially.

The School of Forestry had worked with all the speakers to have their paper prepared so that it could be published in the workshop proceedings. The proceedings were therefore available at the workshop with all attendees receiving a copy and additional copies have been sent to other NZDFI supporters.

Please email info@nzdfi.org.nz if you want a hard copy (an A5 size paperback, 158 pages) of the proceedings for $25 (including postage and GST): or it is available free to download from the NZDFI web site. http://www.nzdfi.org.nz/workshop.php

Waiting for the start of proceedings…..

Barry Poole thanks Chris Harwood for his presentation.

The second day was a morning field trip that included a visit to the NZDFI 2009 *Eucalyptus bosistoana* trials planted at Andrew and Ngaire Lawson's property in Waterfalls Road and on the Marlborough District Council river reserve site at the end of Cravens Road. This was followed by a final lunch and farewell at the Marlborough Research Centre.

Paul Millen introducing attendees to the eucalypt trials at Lawson's property.

Luis Apiolaza describes the effects of frost on the *E. bosistoana* breeding population planted in 2009 on Marlborough District Council river reserve land, Cravens Road.

Overall, the workshop was well received with some very positive feedback.

A special thanks to Maree Way who handled all the enquiries and registrations as well as coordinated the catering. Also thanks to John Walker of the School of Forestry for preparing the programme; inviting and hosting the speakers and for coordinating the publication of the proceedings.

Finally, a big thanks to the speakers, our host landowners and sponsors, and to all those that attended for your genuine interest and support for the NZDFI programme.

Other extension activities

On 16th November, a presentation about NZDFI programme was given to 20 members of the Bay of Plenty Farm Forestry Association (BoPFFA) during a field day at Don Randell's property near Te Puke. This field day focused on opportunities for growing durable eucalypts including viewing some magnificent mature stands of various species that had been planted by Don in the late 1950's and the years following. Thanks to Don, and to Gabrielle Walton (BoPFFA chairperson), Ian Nicholas and the rest of the BoPFFA committee for organising the day.

A talk about NZDFI's work was given at the demonstration trial planted on the Dillon property to Taruna College's organic agriculture group during their November field day.

The TV programme 'Rural Delivery' filmed a story about the NZDFI programme at Cuddon's on 14th December. (This went to air on 18th march and can be viewed on the web site for TV1 'on demand' http://tvnz.co.nz/rural-delivery/s8-ep2-video-4781282).

A presentation on the NZDFI was given in February at the Marlborough Research Centre to a group of visiting Michigan Farmers.

Finally, Ian Nicholas has reported that our NZDFI eucalypt demonstration trial planted at Tect Park in Bay of Plenty has already attracted a lot of interest including busloads of visitors……he sent this photo to prove it (and it's not a local farm forestry branch field day!)

Footnote: Research funding application submitted to Ministry of Science and Innovation

In late February, it can to the attention of the University of Canterbury(UoC) that the recently established Ministry of Science and Innovation was seeking proposals for specific 'Targeted Research' investment by government in purpose-driven research, science, and technology aligned with national priorities that generate economic, environmental, or social benefits for New Zealand. This included a specific category for genetic development/improvement of emerging species that are economically useful and/or environmentally beneficial. Given that this specific investment portfolio strongly aligns with the NZDFI purpose, the decision was made for the UoC to submit a proposal.

This was completed by the University of Canterbury (UoC) in a very short timeframe and submitted on 5th April 2012 with the support of the founding partners. The proposal is for $3.8 m MSI funding over six years for the NZ Dryland Forests Initiative tree breeding and extension programme. In conjunction with this funding, NZDFI is proposing $1.02 m financial support from NZDFI founding partners as well as our industry and regional government supporters and $200k in kind from our host landowners. More information on this proposal will be shortly.