

Project Update - July 2012 to October 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/management

Another 14,400 seedlings of *E. bosistoana* have been planted this spring in three sites located in three different regions: Hawkes Bay, Wairarapa and Marlborough (refer Appendix 1 for NZDFI's 2012 *E. bosistoana* breeding populations).

These new sites include up to 84 additional families that significantly extend NZDFI's breeding populations of *E. bosistoana*. These new families were collected from wild populations in Australia with the locations shown with those that have already been established by NZDFI in 2009-10 (refer Appendix 2 for map of NZDFI's collection of *E. bosistoana* seed).

Thanks to Ben McNeill at Waimarama, Hawkes Bay; Sean McBride with JNL in Masterton and David Dillon in the Waihopai Valley, Marlborough for hosting these trials and assisting with the planting.



Figure 1: View of McNeill's site at Waimarama in September with planting of *E. bosistoana* breeding population just completed.

Seedlings were also propagated from improved Australian seed of *E. cladocalyx* (5,000) and planted in two mass selection trials, one at McNeill's and the other at JNL's Ngaumu forest.

All other breeding populations planted in 2011 have been inspected and where required, sites have been release sprayed in spring.

Assessment of survival and growth rates for all seedlings planted in 2011 is planned to commence late February 2013.

SUPPORTERS:



Demonstration trial establishment and assessment

Site visits to all demonstration trials planted in 2011 were undertaken during late winter and early spring to check weed control and where required, sites have had further release spraying.



Figure 2: View of McNeill's durable eucalypt demonstration trial planted in 2011 with *E. quadrangulata* breeding population on hill behind.

One additional demonstration trial was planted this spring in conjunction with Juken NZ at their Steed forest in northern Hawkes Bay. Thanks to Martin Brown and his team in Gisborne.

NZDFI Regional Field Day/Workshops

The first of NZDFI's regional field days was held in Hawkes Bay on 29th September in conjunction with the Hawkes Bay Farm Forestry Association. There were 60 attendees. The field day started at Longridge farm looking at mature ash group eucalypts grown by Kevin Thompson and his options for harvesting and sale.

Presentations were then given at Patoka Hall by:

Dean Satchell – Introduction to NZFFA web based 'Farm Forestry Timbers – NZ Speciality Timber Market'.

Paul Millen – 'Do current markets for durable hardwood justify investment in planting new eucalypt forests?'

Ian Nicholas – 'Selecting eucalypt species with promising potential for NZ drylands'.



Figure 3: Dean Satchell (centre at end of log) explains eucalypt sawmilling at Longridge farm.



Figure 4: Attendees admire 1 year old *E. notabilis* at Rick Alexander's property during Hawkes Bay field day.

This was followed by lunch then an afternoon visit to Rick Alexander's property in Omapere Road to look over his NZDFI demonstration trial. Thanks to Ed Saathof and his committee for planning and co ordinating the day.

Another NZDFI regional field day was held in Gisborne on 14th November 2012 with a report on this to be given in the next update.

The next NZDFI regional field day is on the Wairarapa on 13th February 2013. Further details will be circulated next month.

NZDFI's durable eucalypt species leaflets have been completed and are soon to be available 'on line'.

New linkages with other projects or research programmes

Juken NZ Ltd is planning a sawing study at their mill in Gisborne of young *E. quadrangulata* logs grown by Ben McNeill at Waimarama. This is being lead by Andy Costello of JNL with Ben donating his trees on the basis that the information will be available to farm foresters and others interested in growing ground durable eucalypts. Thanks to Ben for his generosity.

Given the recent issue of imported railway sleepers rotting after 5 years, there has been a meeting with KiwiRail to present NZDFI's R&D programme and invite KiwiRail's support.

Wood samples have been provided for a new UoC School of Forestry student project to study the potential for heart wood analysis of *E. bosistoana* and *E. globoidea* using NIR.

Project Management & Governance

Meetings were held on 17th October at Marlborough Research Centre of NZDFI's Science Team and Executive Management Team. Minutes are available on request.

Project Expenditure

Over the past four months significant costs have included the planting of the new breeding populations of *E. bosistoana*. JNL contributed a lot of 'in kind' support with the marking out and planting of one of these trials at Ngaumu forest in Wairarapa.

There have also been the costs for the Hawkes Bay field day and mapping and setting up a suitable data management system for all the NZDFI sites as well as purchase of 6x weather stations.

Funds totaling \$130,283 have been received from NZDFI supporters to meet these costs.

Future funding being sought for NZDFI

In August, the University of Canterbury (UoC) was advised by the new Ministry of Building Innovation and Employment (MBIE) that NZDFI's application for specific 'Targeted Research' investment for genetic development/improvement of emerging species that are economically useful and/or environmentally beneficial had been unsuccessful.

The proposal was for \$3.8 m MBIE funding over six years for the NZ Dryland Forests Initiative tree breeding and extension programme. In conjunction with this funding, NZDFI obtained commitments of \$0.7 m financial support from NZDFI founding partners as well as our industry and regional government supporters and \$200k in kind from our host landowners.

Therefore, to ensure effective continuity of NZDFI's programme, two parallel research and development programmes have been developed for which funding will be sought separately.

NZDFI Genetic Improvement programme : Our separate tree improvement programme that is planned with UoC, needs a novel large-scale sampling and selection strategy to enhance early heartwood formation, durability and intensity of colour to match teak and rosewood, distinctive interlocked and straight-grain sub-populations, and improve wood properties.

Funding for this programme will be applied for in April 2013 from the Ministry of Building Innovation and Employment's Biological Industries portfolio.

NZDFI Forest Operational Research and Extension: This programme will engage new growers in learning successful establishment and effective early silviculture to manage durable eucalypts to maximise crop value either for posts and poles, sawlog and carbon options. We will record species growth, form, health and survival so as to measure gains in productivity and value and for future development of growth and yield models for post and pole wood production.

An application to the Sustainable Farming Fund was submitted by Marlborough Research Centre Trust on behalf of NZDFI to the Ministry of Primary Industries on 26th October 2012.

The proposed programme will broaden the number of people actively involved with NZDFI's programme including North Island landowner reps governing the programme and meetings to be held in Masterton. Also new landowners planting more demonstration trials in new regions as well as new support for NZDFI from Horizons Regional Council.

Under this SFF application, NZDFI's proposes to:

- Establish a NZDFI landowner lead extension team with professional support to co ordinate the programme; to promote NZDFI's work through their regional networks and to inform others on how to plant and manage durable eucalypts.
- Design new post and pole regime for all the demonstration trials and work with landowners and others to teach them best silviculture practice through regional workshops.
- Develop web based videos on best practice establishment and silviculture for NZDFI durable eucalypt species for growers to view 'on line' via the NZDFI website and linked to other industry supporters web sites.
- Develop an integrated GPS/GIS mapping and remote data capture system for working with our landowners to set up and measure at least 20 Permanent Sample Plots (PSPs) for five species (100 total) in our 11 demonstration trials.
- Deliver workshops/field days/hui to organic growers and iwi forest growers and conference presentations to new sector interest groups.
- Engage new growers by supporting them to establish more demonstration trials.

The outcome of this application will be known in February 2013.

Anyone wanting further information should contact Paul Millen, NZDFI Project Manager 03 574 1001 or p.millen@xtra.co.nz

Appendix 1: Summary of *E. bosistoana* breeding populations planted 2012

Site 1	Site 2	Site 3
JNL - Wairarapa	Dillon - Marlborough	McNeill - Hawkes Bay
82 families	84 families	80 families
3 controls	3 controls	3 controls
36 tree plots	36 tree plots	36 tree plots
6 x 6	6 x 6	6 x 6
140 plots	140 plots	120 plots
2.2 ha	2.2 ha	1.9 ha
30 - 70 replications	30 - 70 replications	30 - 60 replications
Spacing 2.4m x 1.8m	Spacing 2.4m x 1.8m	Spacing 2.4m x 1.8m
Plot size 14.4m x 10.8m	Plot size 14.4m x 10.8m	Plot size 14.4m x 10.8m
5040 trees	5040 trees	4320 trees

Appendix 2: Map showing locations of *E. bosistoana* seed collection for NZDFI trials planted 2009-2012.

E. bosistoana Australian Seed Collection

