The complex endgame

- CRC for FORESTRY: Where did all my value go? – Mark Brown
- Prepared for hard physical and capital investment when ‘going it alone’ – Geoff North
- Building roading just in time beats “Oh, oh – too late” – Andrew Moore
- Getting on with good contractors (who are as rare as hens teeth) – Michael Combe
- The difficulty in achieving cost-neutral first thinning – Andrew Lang
- Harvesting tales from the Cornish, O’Connor and Wright families

NEWS:
- Farm Forestry Industry Action Plan for Victoria wins government support
- Agreement reached on conditions of Forestry SA forward sale

PROFILE:
- Coreen Schnitzerling – Kin Kin valley, west of Noosa, SEQ
As most AFG members will know, FWPA is the industry-owned company that funds research & development activity and generic timber promotion. FWPA was established in 2007, replacing a statutory body, the Forest and Wood Products Research & Development Corporation.

FWPA receives levy funding from growers, processors and timber importers. As an industry-owned body (and like other such agricultural R&D bodies), FWPA is able to receive matching Commonwealth funding for certain eligible R&D expenditures. But unlike other agricultural industries, the forest industry grower community includes a significant number of state government-owned growers, which cannot be required to make levy payments. When establishing FWPA, an agreement was struck with these government agency growers that they would make a voluntary ‘levy’ contribution.

FWPA has a very significant role in funding and directing research activity that benefits the whole timber industry. In the almost five years since its establishment, FWPA has deliberately spent more money than it has received by way of levies and matching Commonwealth funds – running down its reserves as a consequence. The FWPA board has determined that these reserves are about to reach a level that should be maintained as financially prudent. The core question for the industry summit was: in a climate of constrained funding where should the company’s dollars be focused?

Naturally, there were a great many different answers offered to that question. The meeting did, however, provide an indication of industry priorities, and a process was established in which AFG, along with fellow national industry bodies, will participate in preparing a business case for the various suggested priorities, both in research and in promotion. This work will be brought back to another industry summit in July.

AFG was strongly in favour of the establishment of FWPA and remains a committed supporter. At our 2011 Policy Forum, FWPA funding was a topic for discussion and members indicated a willingness to contemplate a substantial increase in the levy rate, provided we are convinced of the appropriateness of the organisation’s strategic direction. You may be surprised to know that the total annual levy income for FWPA from all sources is a little over $5 million. This does not seem to be a lot for an industry as valuable as ours.

Welcome news from Victoria
I was very pleased to receive a letter in mid-March from the Victorian Minister for Agriculture, Peter Walsh, announcing his agreement to provide funding for the development of a Victorian Farm Forestry Industry Plan. I hope that all Victorian AFG members will take the opportunity to participate in discussions leading to the preparation of the plan. The Victorian farm forestry community now has the chance to articulate our own vision and set out a way forward for our industry.

David Fisken
NEWS

PRESIDENT’S REPORT: FWPA industry summit: where to now? – by David Fisken

POLICY FORUM

GYMIE AFG 2012: At the heart of a very active and diverse timber industry – by Greg Unwin

VIC: Farm Forestry Industry Action Plan wins government support – by Warner Ragg

Agreement reached on conditions of Forestry SA forward sale – by Warner Ragg

NORTHERN NSW: Developing new forestry forms that enhance biodiversity – by Warwick Ragg

WA: Restructuring of the Forest Products Commission’s sharefarming – by David Geddes

Compromise on Tas forests ‘peace process’ still not in sight – by Frank and Robert O’Connor

TOP END: Opening up the north for sandalwood – by David Geddes

RET wREcked for native forests – by David Geddes

Managing myrtle rust’s spread to Victoria – by David Geddes

Rob de Fegely appointed President of IFA – by David Geddes

The Australian Standard for Forest Management is undergoing revision – by David Geddes

EDITOR’S REVIEW: Don’t wait until your trees are falling to seek advice – by Sean Ryan

CANBERRA CAPERS: Winds of change blow hard – by Sean Ryan

STILL STANDING

Purpose-built to showcase SEQ’s hardwood timbers – by Sean Ryan

PROFILE

SEQ: Coreen Schnitzlering: The original tree changers – by Kaara Shaw

BRANCH NEWS

SEQ: A walk in the forest followed by an ear bashing – by Carol Neal

SOUTH COAST WA: New voice for private forestry – by Penri Hewett

FEATURE

TOP END: Second generation trials seeking superior clones for Khaya – by Don O’Reilly

THEME - HARVESTING

OVERVIEW: Where did all my value go? – by Mark Brown. CRC for Forestry

WA: Be prepared for hard physical and capital investment when ‘going it alone’ – by Geoff North

GREEN TRIANGLE: Building roading just in time beats “Oh, oh – too late” – by Andrew Moore

NSW: Getting on with good contractors (who are as rare as hen’s teeth) – by Michael Combe

TAS: Taking control of your logging is the way ahead – by Frank and Robert O’Connor

VIC: The difficulty in achieving cost-neutral first thinning – by Andrew Lang

TAS: Checklist as to who and how to conduct harvesting – by Rob Smith

NORTHERN NSW: Integrating sawlog and cattle production – by Mark Wright

SE QLD: In search of new sources for power poles – by David Wood

GREEN TRIANGLE: New markets for timber products need to be found – by Michael Cornish

WA: Three methods for harvesting blue gum – by Stephen Martyn

LETTER

What a fantasy world we live in – Gordon Bradbury
Your Conference Organising Committee has been doing a lot more than having tea and bikkies and chin wagging. We’ve been working hard to put together a great program in a great location with great options before, during and after the conference for you and your family.

The conference will be in now customary three streams, which this year will be Growing, Products & Markets and Integration. It will concentrate on local species, practice and forest types, as well as the political landscape including vegetation management laws, the business landscape and the scientific landscape. It will also feature a range of topics, trees and issues near to the hearts of farm foresters from all over Australia and the world.

The keynote speaker will be Peter de Marsh of the International Family Forest Alliance. The IFFA represents small scale, local and indigenous forestry groups across the globe and is the voice of family forestry worldwide. The IFFA’s objective is to promote the development of family forestry and advocate supportive policies. It provides recommendations to international forest policy processes and offers a forum for exchange of experience, ideas and information.

Peter de Marsh will fascinate and amaze you with how growers from all over the world are dealing in innovative ways with the same issues we face. Peter is a Canadian who hails from New Brunswick and has been active in the Canadian Federation of Woodlot Owners.

Other speakers will cover the local hardwoods and softwoods, as well as opportunities and research in areas such as teak and sandalwood. There will be a strong focus on integrating farm forestry into a profitable business, often linked with grazing. We’ll hear about the latest research and development including ‘plastic seeds’ and new genetics projects. Sessions will cover sawn and whole timber uses with some time spent on poles – a local speciality from our spotted gum forests and in high demand from electricity suppliers. We’ll also hear how to make money from the trees we love to grow and ways of increasing our position on the value added ladder. Property planning, risk management, carbon and biochar will also make an appearance on the program.

Getting to and from Gympie
Gympie is about 160km and two hours from Brisbane. It’s the capital of the Cooloola Regional Council and has a population around 20,000. Lately, it’s made the news for its regular floods, but October will be mild and dry.

For those flying to Brisbane, Gympie is easy to find. As many of you will want to look around before or after the conference, you may want to hire a car. All the usual companies operate from the Brisbane Airport. It’s two hours north to Gympie straight up the Bruce Highway. Other options include the major coach lines and electric trains. An airport train can take you from the airport to link up with the Gympie line. Some airlines fly to Maroochydore from southern locations where the only viable option is to hire a car and drive just over an hour to Gympie.

Accommodation
Gympie has a range of options to suit every need and budget. Those wanting a new 4 star motel might do well at the Mary River Motor Inn. Those preferring a more rustic environment might be interested in the Gympie Conference Centre. It’s next to the Woodworks Museum where the Icebreaker will be held. In between there’s a number of options. You could even contemplate bringing the family and staying in Noosa. It’s a one hour drive, but you can readily book a lovely self-contained apartment on the Noosa River to keep the rest of the family happy while you enjoy the conference. There’s also the local option of staying at the Gympie Golf Retreat.

You can discuss all your accommodation and tour issues with Gympie Cooloola Tourism on 1800 444 222. Their website also features many details of the attractions in and around the district: www.coolumba.org.au

Pre-conference trip
The tour will commence in Brisbane and progress via NSW to Warwick, Crows Nest, Kingaroy, Hervey Bay and Gympie. Indicative cost estimate is $1,100 (including all meals and accommodation and Fraser Island trip; alcoholic beverages not included). Confirmation of participation will be by a deposit of $250 paid to AFG Canberra by 31 May 2012 and on a ‘first in best dressed’ basis in regard to numbers. All accommodation will be at comfortable (3-star +) motels /cabins. Contact Neil Halpin for details on neil.halpin@treecroptech.com.au or 0428 757 018.
Features of the trip will be family hardwood sawmilling / plantation operation; forestry education & its outcomes; biochar; organics/composting for commercial use; carbon credits and vegetation offset initiatives; exotic pine plantations; forestry education in Queensland; western white gum plantings; hoop pine plantation management from establishment through to processing; hardwood species taxa trial and plantations in the Burnett; hydrology/salt/soil issues; forestry plantation interactions with agriculture (cropping and grazing); alternative tree plantations; Tiaro Pole Mill; spotted gum seed orchard; Queensland forestry research status/initiatives and (weather permitting) a hands-on exercise of tree marking for thinning in hardwood plantations. If that wasn’t enough there’s an optional Fraser Island tour (full day).

Field trips
Gympie is at the heart of a very active and diverse timber industry, which is reflected in the number and variety of day tours being planned for the middle day.

All are planned to have you only on the comfortable coaches for a short time before getting to see the action outside the bus. The close travel distances mean some trips can spend longer looking at the sights and others can fit more into the day. The program is shaping up to include the following:

• Araucaria Tour: Look at the growing and milling of this important local species as well as some hardwood plantations;
Farm Forestry Industry Action Plan for Victoria wins government support

In March, the Victorian Government agreed to support Farm Forest Grower Victoria’s request for funding for development of a Farm Forestry Industry Action Plan.

Farm Forest Grower Victoria (FFGV) sought $50,000 in financial support to allow consultative development with the farm forestry sector, networks and government, in order to better target priorities and directions set under DPI Victoria’s Farm Forestry Program, which was completed in October last year.

The Victorian Minister for Agriculture and Food Security, Peter Walsh, responded to FFGV in March, supporting FFGV’s request for funding of a Farm Forestry Industry Action Plan and declaring that, “The Coalition Government is committed to supporting and strengthening Victoria’s forestry industry.”

The Minister suggested that FFGV work with another of the state’s farm forestry industry bodies, Trees Victoria, in developing the Industry Action Plan. He went on to say that while DPI Vic would be available to contribute to the plan, due to “the tight budget environment, DPI may have reduced capacity to contribute to its implementation.”

The Minister urged that the plan be used as a “means of increasing industry self-reliance.”

Submitted by the Chairman of FFGV, David Fisken, who is also President of AFG, the project concept has as its primary objective creating a shared vision for the strategic direction of farm forestry in Victoria, and is to be completed over a four month time period.

The working group designated to advance the initial concept consists of David Fisken, David Curry (Otway Agroforestry Network), Andrew Lang (SMARTimbers) and Brian Thompson from DPI Vic.

From Gib Wettenhall

continued from page 5

- Southern Pine and Processing Tour: There are several processors (MDF board, yellow tongue chip board and wet and dry milling) of the largest pine plantations in Queensland that surround Gympie. You’ll have a chance to get up close and personal with both growing and using this resource;
- Mary Valley Farm Forestry Tour: Check out farm forestry options along the Mary River, which includes the area that was to be under the Traveston Dam;
- Plantation Hardwoods Through the Ages: Take a look at the original government joint venture, giant Gympie messmates in state forest, early plantation trials and more recent hardwood plantings;
- Dry Sclerophyll Private Native Forestry: Inspect milling, large private forests with permanent growth plots and integrated grazing and pole production mainly from spotted gum;
- Wet Sclerophyll Forest: Visit the blackbutts growing in the mountains, as well as local milling and fire management sites.

Pre- and post-conference options

We’re also going to enable delegates to make the most of their trip to the region by letting them back it up with a pre- or post-conference exploration of the best of the Cooloola area including:

Gympie
Take a ride on the historic Valley Rattler steam train, visit the WoodWorks Museum, go gold panning

Fraser and Cooloola Coast
Feed the dolphins or go sailing at Tin Can Bay, go whale watching or fishing at Hervey Bay, drive along the beach to the coloured sands or go paragliding over Rainbow Beach, or visit Fraser Island and see tall forests growing straight out of sand and swim in clear lakes.

Noosa
Shop and dine on the famous Hastings Street, stand up surf on Noosa Beach, spot koalas and goannas in the Noosa National Park.

Sunshine Coast
Go surfing at Coolum or Maroochydore, dive with the sharks at Underwater World or see a crocodile at Australia Zoo.

Brisbane
BrisVegas turns on all the usual charms of the big smoke, but adds the best Modern Art Museum and Art Gallery in Australia and you can go swimming at Southbank or take a ferry up and down the river.

South East Queensland
There’s more than enough to fill your holiday with a trip to Stradbroke Island, Dreamworld, the Gold Coast or horse riding and mountain climbing in the Scenic Rim.

To top all this off, there will be a feature of local wines and produce to tempt you during the conference. Now, where were those bikkies?

Andrew Sinclair is a lawyer by day and a tree farmer by night. He’s also the Conference Organising Committee Chair and past SEQ Branch President.
An agreement was reached at the end of March on conditions for the sale of up to three of Forestry SA’s forward harvest rotations.

South Australian Treasurer Jack Snelling announced the conditions of the agreement in Mt Gambier, claiming that the government had worked with the South-East Forestry Industry Roundtable to ensure the regional economy and jobs would be protected.

The Chairman of the Roundtable, Trevor Smith, says the group believes that the major community concerns have been listened to by the SA Government. Conditions recommended by south-east timber industry and community leaders will be part of the contract for the forward sale of forest harvests, he says, and they will be put in a memorandum to the bidders.

Diana Lloyd, President of the AFG’s Green Triangle Branch, agrees. “This announcement provides some clarity as to the proposal,” she says. “The initial response is being quietly considered, although the uncertainty in the community will continue until this is finalised.”

**Specific conditions**

Conditions placed on forward sale bidders include:

- **Rotation length** – The purchaser will need to achieve a minimum area weighted average clearfell age of between 32 and 35 years for the first rotation period, which will be at least 32 years. This length is consistent with the current policies of Forestry SA;

- **Domestic supply** – There must be a commitment to match Forestry SA’s current level of planned viable domestic supply. Exports will be met through current Forestry SA processes for uncontracted sawlog sales where local sawmillers are able to compete with exporters on price and other commercial terms to secure supply;

- **Reporting requirements** – The purchaser will be required to report annually and if they breach the contract, the SA Government can seek financial remedies, sanctions or contract termination;

- **Replanting** – To ensure long term sustainability of the plantations, the purchaser will be required to replant areas of the estate when felled or destroyed by fire. The new owner will be required to use the available land for forestry purposes only.

Treasurer Jack Snelling said these conditions were in addition to a series of measures already in place, including the SA Government retaining ownership of the Green Triangle forest land, the water rights and any carbon rights; all current ForestrySA staff remaining with Forestry SA as public sector employees; and the government ensuring that current levels of community fire protection remain.

Gib Wettenhall
Developing new forms of forestry that enhance biodiversity

BY DOLAND NICHOLS

A project managed by the Subtropical Farm Forestry Association has as its primary objective to increase the number of farmers adopting activities that contribute to the ongoing conservation and protection of biodiversity by way of farm forestry practice. This dovetails with a national target of the Commonwealth-funded Caring for our Country program.

The project, ForestLinks aims to establish approximately 250ha of best practice farm forest cover using native species on strategic properties across the Northern Rivers region of NSW, which link to an additional 5,000ha of fragmented native forest. Titled ‘Enhancing landscape conservation values through farm forestry,’ with activities like Forest Links, we may be seeing the future.

As one of the last people left in Australia teaching a unit on ‘Native Forest Silviculture’ – an art and a science that is little practiced and likely to be outlawed soon – I have plenty of opportunities to reflect on the future of forestry.

The concept of public forests managed for a variety of purposes, developed over a hundred years ago in Australia and the USA, seems to have fallen on hard times: the environmental functions have been turned over to reserve systems and the productive side to private businesses. The Managed Investment Scheme model for plantation development seems pretty much to have fallen in a heap.

The Wrights considered advice from many sources, including university types, and have learned from their successes and failures. Now they offer visitors the prime example of well-managed plantations in the region.

J. Doland Nichols, Associate Professor in Sustainable Forestry, School of Environment, Science and Engineering, Southern Cross University. He is Chair of the ForestLinks Steering Committee.

The ForestLinks project has a lively website, to be found at: http://forestlinkssffa.blog.com/
In the wake of this decision the FPC attempted to sell its interests in the portion of the sharefarm estate that was not linked to existing long term state agreements for the supply of timber into pine processing facilities in Dardanup (Wespine and Wesfi) and Neerabup (Wesbeam). The estate that was available for disposal included approximately 5,000ha of pine located in the Esperance region, 5,600ha of Western Australian sandalwood and 5,000ha of eucalypt sawlog plantations.

In October 2010 and May 2011, the FPC ran two separate Request for Tender (RFT) processes in the hope of identifying parties interested in purchasing the FPC’s interests in the sandalwood and Esperance pine estates (these components being viewed as the more saleable assets). While these processes did attract some interest, after a thorough evaluation the FPC declined all tenders based on WA Government tendering policies and guidelines.

The failure of the RFT process to find a buyer does not impact on FPC’s commitment to meeting its obligations in relation to its sharefarm estate. This includes responsible silvicultural management and the pursuit of new market opportunities. While a significant number of staff have departed the agency in the course of the restructuring process, plantation management capacity will be maintained at FPC offices in Esperance, Albany, Bunbury, Harvey, Collie, Nannup and Gnangara for the foreseeable future. In addition to managing its own estate, the FPC will continue to manage plantations established on behalf of BP Kwinana and Synergy.

It is hoped that the advent of the Federal Government’s Carbon Farming Initiative will provide an incentive for private investment in new plantations aligned with the existing estate in order to continue to build towards achieving industry critical mass for the various projects. FPC is keen to share the knowledge that has been acquired from our sharefarming programs with anyone that has an interest in furthering this initiative.

Anyone with any queries relating to FPC timber sharefarms can contact David Guille, Manager Sharefarm Operations, Forest Products Commission on 1800 241 688.
Compromise on Tas forests
‘peace process’ still not in sight

BY GREG UNWIN

The Tasmanian native forests
‘peace agreement’ process soldiers
on with no compromise between
timber industry representatives and
environmental groups (ENGOs) in
sight, some two years on from
initial negotiations.

Large scale private companies have
in the interim significantly reduced
operations and jobs or withdrawn
entirely from native forest harvesting and
processing. Reasons include commercial
strategic planning and industry demise
brought on by uncertain markets, targeted
environmental activism (ostensibly it
is claimed, outside of the IGA process),
financial vulnerability in the global
context and a drastic restriction in export
facilities as a result of the sale and
cessation of the Triabunna woodchip plant
on the east coast – see Forest Grower Vols.
33 (4) and 34 (1, 2 and 4).

For small to medium scale private forest
growers who remain, including some
members of AFG, the ongoing saga
provides an added and unresolved source
of uncertainty to investment and returns
in native forest management, planning
and operations. This is particularly the
case since the small scale sector of the
industry has traditionally been obliged to
trade on markets, terms and prices offered
or negotiated by larger scale corporate and
public growers plus processors. Now there
is the added uncertainty posed by the
attenuated Tas. Forests Intergovernmental
Agreement (IGA) process itself.

Professor Jonathan West’s expert panel
delivered its voluminous series of reports

to government and the public on 23
March 2012, totaling more than two
thousand pages. Megabytes of technical
information notwithstanding, the
conflicting conclusions of the several

disparate work plans that produced these
reports on conservation values, timber
supply and social and economic impacts
(including mining prospectivity) in relation
to proposed areas for reservation were,
to large degree, predictable.

“The reality is we’ve got five separate
reports here, every one of them conflicts
with another because they’ve [each] come
from a single perspective,” commented
Terry Edwards, Forest Industry Association
Tasmania on the reports’ release.

According to Professor West’s Chairman’s
Report: “Two key findings… should shape
any proposed resolution to the dispute.
Neither side of the conflict will likely be
happy with our conclusions…”

“Tasmania’s native forests (not including
plantations) have been and continue to be
harvested substantially above long-term
sustainable yield, in respect of the key
product segments to which they provide
resources.

“The areas proposed for reservation [in
national parks] by the Environmental
Non-Government Organisations do
contain a range of conservation values,
but not all these values would be lost if
the forests were harvested once.”

Bob Gordon, CEO of Forestry Tasmania
(FT), was quick to respond to questions
of sustainable yield on ABC News on 27
March: “West either doesn’t understand the
forest [yield] processes and calculations or
he has made a mistake… We know that
Professor West is wrong. Every independent
scientist in Australia that has gone through
FT’s forest [yield] processes and calculations or

Distraction indeed! This hoary old
chestnut will almost certainly come
down to spatial and temporal definitions
of what is and what is not included in
the native forest estate, and when, for
modelling of growth, harvest and yield. At
time of writing, the sustainability claims
have been passed to the Programme for
the Endorsement of Forest Certification
(PEFC) for further verification, with FT
confident its estimates will be confirmed.

Compromise or bust

Professor West’s firm view and warning is
that both industry and ENGO signatories
to the Tas. Forests Agreement will need to
compromise on their respective demands
and expectations or risk losing all on
both sides. The main sticking point is
over the extent of proposed new reserves
(now estimated in the range of 150,000-
572,000ha) and the consequent reduced
harvest supply for industry.

Amidst continuing frustration politically,
Tasmanian Premier Lara Giddings
attempted some immediate stimulus
of her own by promptly returning the
conclusions and reports of the expert panel
to the negotiating parties for compromise
and resolution within three weeks (by
mid April 2012). This would allow time for
preparation of legislation enabling formal
approval of new reserves by the Tasmanian
Parliament by end of June, a deadline
required by the terms of IGA, but now
hardly considered achievable.

The spirit of compromise is not clearly
evidenced by continuing environmentalist
threats to local processors and the
targeting of markets overseas (despite
a rather disingenuous but so-called
‘olive branch’ offer), which has led to
the withdrawal from the table by the
peak industry group, the Forest Industry
Association of Tasmania.

Meanwhile, back in Murray Street, the
Tasmanian Liberal Opposition claims that
the Tas. Forests IGA will be dead in the
Hobart waterfront by week’s end on Friday
13 April (post this magazine’s author
deadline). Perhaps they know a thing or
two, but the Tas. Government says it is not
concerned by delays and missed deadlines
and argues that signatory parties should
continue to work together.

For the next winter edition of Forest
Grower, the Tasmanian Branch of
AFG has agreed to review the likely
impacts of the Tasmanian Forests
Intergovernmental Agreement for
private native forest growers, pending
resolution of the above. Contributions
and comments are welcomed by Des
King, Arthur Lyons and Greg Unwin on
behalf of AFG Tasmania Branch.

Greg Unwin is Senior Lecturer in
Forest Ecosystems and Agroforestry
at the University of Tasmania in
Launceston and is a member of AFG’s
Tasmania Branch.
Earlier this year, TFS Corporation Ltd (TFS), already manager of the world's largest Indian sandalwood plantation, purchased 15,000ha in the Katherine region of the Northern Territory. Along with the recent purchase of 750ha in the Burdekin Irrigation Area, north Queensland, these represent a continuing move by TFS to diversify its land base outside the traditional Ord River Irrigation Area (ORIA) around Kununurra, Western Australia.

The Northern Territory’s land and water remain largely undeveloped. The high costs of infrastructure, freight and a lack of experienced management and suppliers have challenged land development in the NT. Most projects have been unsuccessful with the exception of some smaller horticultural crops. Sandalwood gives the NT an exciting opportunity for plantation development and large scale irrigated development.

Founded in 1997 to build on the success of government trials into the growth of Indian sandalwood on the Ord River, TFS commenced planting Indian sandalwood in the ORIA in 1999 and has continually developed silvicultural techniques and processes to the extent that annual plantings now exceed 1,500ha, with a total of 5,000ha planted.

There are some 16 species of sandalwood naturally distributed in an arc from India, via Indonesia and East Timor, Papua New Guinea, Australia and across to many Pacific islands as far east as Hawaii. All are hemiparasites. So valuable are the products from these trees that many are threatened within their natural range by over-exploitation. One species has become extinct as a result of overcutting and changes in land use in its native habitat of the Archipelago Juan Fernandez off the South American coast.

The most valuable of all the species is Indian sandalwood (Santalum album), which is native to Timor and has spread by human endeavour over thousands of years to Indonesia, India and, until recently in a limited way, to Australia. Now the world’s most valuable tropical hardwood, Indian sandalwood heartwood trades in excess of A$110,000 per tonne, having risen at a compound rate of over 17.5% per year over the past 19 years.

In Kununurra, TFS has plantations approaching harvest age and commercial harvesting will commence within the next two years. Various trial harvests have shown that oil quality is well within the range specified by ISO and quantity is comparable with expectations.

**Northern opportunities**

TFS has actively sought out land in northern Australia to expand its operations and has targeted other significant areas besides Katherine and the Burdekin.

The NT provides an opportunity for TFS to showcase that extensive irrigation and cropping can be carried out and that the region can support large scale irrigated development. TFS operations have had and continue to have involvement with food production – rice, sugar, peanuts, and cattle grazing. This complementary approach of forestry and food production ensures that where TFS land is considered as unsuitable to the growth of Indian sandalwood, it may be utilised in other horticultural and agricultural enterprises.

TFS have appointed experienced managers to establish and manage the new plantations in the NT and north Queensland. Works programs are underway, from land development to the setting up of infrastructure including irrigation, workshops, offices and housing, along with the acquisition of necessary plant and equipment. It is planned to have around 1,000ha planted in NT/QLd before August 2012. TFS will also set up a number of progeny trials in each of the regions to ensure that longer term programs will use the best possible genetics.

Using management expertise and environmental credentials, the best land will be developed and the more sensitive soils, flora and fauna preserved. If the aquifers are handling the water use, then it can be expanded. Where issues are identified, usage could be scaled back.

**continued bottom page 12 ▷**

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RET wRECKed for native forests

BY WARWICK RAGG

During the course of the negotiations by the Multi-Party Climate Change Committee (MPCCC) on the structure of the Clean Energy Future there were a few casualties, and perhaps some changes slipped through in the dead of night when not everyone was looking.

Independent MHR Rob Oakeshott certainly believes that the removal of eligibility of native forest biomass from Renewable Energy Certificates (RECs) under the renewable energy target scheme (RET) was slipped in without attention being drawn to it. So much so that he led a parliamentary revolt to disallow the regulation that removed the eligibility. Even more Machiavellian was the support of the Oakeshott disallowance motion by that other independent MHR Tony Windsor (by way of seconding it), also apparently deceived in the MPCCC process, and then voting against it.

These are, indeed, interesting times.

Let’s rewind to unpack this. There is a government scheme to reduce reliance on fossil fuels through the use of an electricity subsidy known as the RET. Through the RET, a producer of electricity through utilisation of renewable energy sources, such as biomass, wind and solar, can receive apply for and receive a REC. This REC has a moving value of about $40.00 per megawatt hour. For native forest biomass there has always been a gentle reminder in the regulations that it is for utilisation of wood waste due to a clause known as the high value test. This test essentially seeks to ensure that there is no possibility of harvesting native forest for the primary purpose of generating electricity. As if that wasn’t difficult enough, the mechanics of the scheme also dictate that a REC cannot be applied for until the electricity is generated. A condition guaranteed to test an investor’s confidence where the subsidy is fundamental to a project getting off the ground, let alone generating electricity.

Slightly tangentially, AFG has long critiqued the RET as it only gives credit to the use of a restricted range of renewables to produce electricity – not heat or biofuel generation – both of which we believe are far more likely to be viable as regionally-based industries for the private forest sector.

No chance

Anyway, despite all of these existing hurdles, the Greens, presumably at the behest of their anti-forestry Tasmanian leadership, thought it important to ensure that there was no chance of any further RECs being issued for native forest biomass sourced electricity. For the record, to date there has been one REC successfully issued for electricity. A number of generators have and continue to produce RECs from the combustion of plantation-sourced wood, recovered waste wood and black liquor from chemical pulping.

So, on a matter of clear public policy principle and the removal of future opportunities for the native forest wood waste sector, a concerted campaign was launched from within Oakeshott’s electorate by the timber industry. To the extent they got Oakeshott across the line to move and support a disallowance motion (see note) it was ultimately lost on the casting vote of the Speaker after a tied vote. Windsor voted with the government to cause the tie. Although it must be noted that even if Windsor had given his support, it was still likely to have been a tie, as a government member failed to make the vote.

While it’s a disappointing outcome and sound public policy is much the poorer for it, the world will not necessarily end. First, the limitation only applies to native forest waste, not plantations. Second, the comparative advantage remains available under the Clean Energy Future package (the ‘carbon tax legislation’) for non-fossil fuels over fossil fuel-derived energy via the formers’ exemption from the carbon tax, including native forest waste. From an AFG perspective, the bigger disappointment with the package is that Windsor and Oakeshott held fast on their demand for an exemption for road transport fuels from the carbon tax, which largely removes the comparative advantage that biofuels would have enjoyed against their fossil fuel-derived competitors had policy purity been maintained. While this is expected to be a short term issue only, it’s disappointing nevertheless.

There are hundreds of stories yet to be written about the perverse impacts of an impure (in design terms) carbon tax, and those impacts will probably be worse than the GST. This has been one of them.

Warwick Ragg, Chief Executive, Australian Forest Growers.

Note: there is a defined process for the development of legislation and regulations. Legislation must be introduced to the parliament, debated and passed by a simple majority of each house of Parliament. Regulations on the other hand exist by virtue of the legislation they are connected to and are drafted outside the parliamentary chamber by the relevant department under the supervision of the appropriate minister. Once defined, they are introduced into the parliament where they can only be varied or removed by the process of a disallowance motion supported by a simple majority of one house of the Parliament. Once a disallowance motion is moved, the government has a defined period to resolve the motion, and the regulation cannot take effect until the disallowance motion is defeated or withdrawn.

continued from page 11

Sandalwood plantations require ongoing intensive management and it is expected that a workforce probably exceeding 40 full time equivalents will be required for the new NT areas alone. TFS is expected to have a total workforce Australia-wide of over 150 permanent and up to 400 casual staff throughout the year.

Chris Done has been Senior Forester for TFS Corporation Ltd for some eight years. He had his first taste of tropical forestry in Papua New Guinea, which eventually led to taking on the inaugural role of Regional Forester for the WA Kimberley Region in 1979. One of the early 1980s projects was to try Indian sandalwood and he planted the first few seedlings in the Kimberley in January 1981. “The size and vitality of the industry has exceeded the expectations of, I think, all involved,” he says.
Managing myrtle rust’s spread to Victoria

BY ANDREW HENDERSON

Myrtle rust has been confirmed at more than 20 sites in Victoria and the focus is now on management to minimise its spread and impact. The disease was first found in Victoria in December 2011, but preparations for its arrival started much earlier.

Soon after the first Australian detection of myrtle rust in New South Wales in 2010, the Victorian Department of Primary Industries (DPI) began engaging with affected industries and land managers to prepare for the likely incursion of the disease into Victoria.

The forestry, nursery, cut flower and beekeeping industries, and major land managers including VicForests, local government, Parks Victoria, the Department of Sustainability and Environment and the Royal Botanic Gardens, combined with DPI to form the Victorian Myrtle Rust Coordination Committee.

Through the committee, the industries and agencies most affected have been aware from an early stage of what would happen if a myrtle rust outbreak occurred and what their management responsibilities would be if the disease could not be contained.

In turn, DPI’s preparation for an effective response to a myrtle rust outbreak was improved through awareness of the likely impacts on these agencies and what assistance they would need. As part of this preparation, a program of monitoring nurseries and high risk native forest sites was implemented.

When the first Victorian detection was made at a retail outlet on the Mornington Peninsula, nurseries linked to the affected premises were inspected to determine how it arrived, how far the disease had spread and what species had been infected. A detection in a public park eventually confirmed that the disease had not been contained and prompted a shift to management, by both public and private land managers.

To support affected industries and agencies, DPI has been holding information sessions about recognising and managing myrtle rust and distributing related resource materials. By early March 2012, more than 600 people had attended these sessions.

Permits for fungicide use have also been made available to provide landholders with a chemical control option.

DPI continues to encourage reporting of suspected myrtle rust detections, so that the spread of the disease in Victoria can be tracked and host species recorded. Several agencies are assisting by monitoring high risk ‘sentinel sites’, such as visitor centres or specimens of highly susceptible species. This provides a better chance of detecting the disease as early as possible and slowing its spread.

DPI will also continue to monitor nurseries and advise on how to manage infected material. To help minimise the impact on trade, business managers are being trained to enable them to certify and export Myrtaceae host material under agreed interstate arrangements.

It is likely that there will be further introductions of myrtle rust into Victoria from NSW and Queensland and that the disease will continue to spread through natural and assisted movement. Effective management will slow down its spread and minimise the impact on industry and the natural environment.

Victoria’s myrtle rust program will be aligned with the national program to ensure that a coordinated approach is achieved and that longer term activities, such as research and development, meet Victoria’s needs.

Victoria’s host list of species that myrtle rust has been found on can be found on the DPI website.

Andrew Henderson is a communication officer with Biosecurity Victoria, Department of Primary Industries.
The first public comment phase of the Australian Forestry Standard Ltd’s (AFS) revision process closes soon.

A revised Australian Standard AS4708 was released as a draft for public comment in March and the comment period closes on 18 May. A second public comment period will be based on a 2nd revised draft and is scheduled from June to August 2012.

The Australian Forest Certification Scheme, of which AS4708 is a key component, is also accredited by the Programme for the Endorsement of Forest Certification (PEFC). PEFC is the world’s largest certification system for sustainable forest management. PEFC requirements have continued to evolve in recent years and the Standard Review Committee has sought to ensure that the revised Australian Standard (AS4708) continues to be consistent with PEFC requirements.

“The intensive public participation plan for the project will fully engage all stakeholders groups and interested parties within and connected to sustainable forestry and the supply chain of wood and wood products,” said the Chairman of the Standard Review Committee, Dr Paul Biggs.

The Committee is keen to get a broad range of feedback from all of the stakeholders in good forestry practices and in using sustainable forest products in Australia.

To access the draft revised standard and the Stakeholder Feedback Form go to: www.forestrystandard.org.au/16StandardsRevision.asp

Completed feedback forms can be submitted to PO Box 7031, Yarralumla, ACT 2603 or emailed to: SRC-AS4708@forestrystandard.org.au

Don’t wait until your trees are falling to seek advice

BY GIB WETTENHALL

Years of effort in establishing and managing a plantation can be destroyed in a few minutes when a farm forester fails to pay attention to his harvesting choices. This is the key message in the overview article for the harvesting theme written by Mark Brown who was a Program Leader researching different harvesting systems in the CRC for Forestry. With the loss of its bid in last year’s Cooperative Research Centres funding round, the CRC for Forestry is being relocated to the University of the Sunshine Coast where Mark is the Professor of Forestry Operations.

The first step in a harvesting operation is to ensure adequate access for trucks to haul whatever you produce from your farm forest or plantation. Green Triangle plantation owner Andrew Moore has learnt from hard-won experience how the more you have to mess with the landscape, the greater the roading costs and the bigger the environmental impact. Timing is everything, he says, a rule that seems to apply along the whole chain from weeding to thinning to product marketing. Don’t go too early or ignore an issue until it’s too late.

But how do you learn other than from experience? Taking it slowly is one way. Where you are thinning for poles or firewood on a small scale, you can probably get away with using existing farm equipment, like the Wright family in the Northern Rivers of NSW.

But once you scale up, so do the costs of the harvesting machinery. For a harvester and processing head, you probably won’t get much change out of $100,000 for new equipment. The peripatetic Andrew Lang looks at a number of Scandinavian models suitable for first thinnings, including some second hand options. Practising farm forester Geoff North estimates the ballpark figure for purchasing the full suite of harvesting machinery at $150-300,000. As he says, if you want the full level of control that goes with doing it yourself, be prepared for hard physical work and a not inconsiderable capital investment.

The alternative is to employ a contractor to manage the harvesting operations for you. Which is exactly what you should do if you can’t confidently tick all the boxes in forester Rob Smith’s checklist. This is probably the best route to take for larger scale operations. It can work well – as it has done for the Cornish and O’Connor families – where you can find a good contractor. The trouble is, Michael Combe asserts, that multi-skilled and trained professional timber harvesting contractors are as rare as hen’s teeth.

It would seem that to find your way through the labyrinth, it’s important to have access to high quality independent advice – as still available through Private Forests Tasmania and Private Forestry South Queensland, and not-so-long-ago found among farm forestry extension officers in every state of Australia.

Nowadays, try turning to your local AFG branch as a starting point for advice and support. Don’t wait until your trees are falling before using its members’ networks.
Winds of change blow hard

The future’s in the air
Can feel it everywhere
Blowing with the wind of change

From the lyrics of Wind Of Change (Meine, Klaus)
performed by The Scorpions.

I’ve been a keen observer of elections for over 20 years, and I’ve not seen the like of it in my time. Other commentators who have perused the historic stats seem to confirm this view for even further back in time.

Decline in minor party vote

Other than the change in government, the key theme for all these elections has been the stagnation and decline of particularly the Green vote and the independents. One doesn’t need a very long memory to see a pattern emerging here. The pattern being the introduction, elevation, occupation of the balance of power, then the rapid demise of the Australian Democrats. Once the bastard keeping them honest (Don Chipp) was no longer there, the philosophical splits began to emerge, and they became a divided and then quite quickly a spent force.

The arrival of hard left radical Lee Rhiannon in Canberra, along with the diversity of view and outlook amongst the potential successors to Senator Bob Brown, reeks of the Democrats mark two. And given the rapid ‘vacating of the independent left ground’ we have seen particularly in Victoria, NSW and Queensland, the slide may very well be beginning.

There’s still a lot of water, and I suspect a fair bit of blood, to flow before the next federal election is due. Nevertheless, the trend emerging from the, particularly, most populous states seems to be supporting the view that the flirtation with independents may be seriously waning. It will be most interesting to see how the conservative electorates of Windsor and Rob Oakeshott judge the decisions made by their representatives at the next election. It will be of equal interest to see if the state-based waning of Green support is replicated nationally in the Senate. It’s a brave call, but there would be a strong anticipation that the voters will not produce a minority government next time, judging by the verdicts seen recently.

Western Australia, Victoria, New South Wales and now Queensland have all seen their long term Labor governments fall. Seemingly each election offers a more sound thrashing than the previous one. There is another interesting dynamic at play, which is the reduction in support for independent and/or minor parties. The latter two thrashings were predicted and expected, although the magnitude was at least mildly surprising. The former were perhaps not fully expected and were modest victories.

What is of most interest in Victoria is the almost total annihilation of minority and independent parties – to such a degree that the government now has control of both houses of parliament.

In NSW, the Coalition governs without an outright majority in the Legislative Council, but it has the luxury of having 19 out of 42 seats, thus needing just two to gain legislative support. Such support can be gained either from one of two conservative leaning pairs from the Shooters and Fishers Party and/or the Christian Democrat (Fred Nile) Party. Or indeed the opposition or the Greens could also be prevailed upon to give support.

In Queensland, there is no house of review or upper house. This makes the magnitude of the hulking win – over 85% of the 89 seats – all the more compelling. Again, the minority party vote swung to the right, with the new Katter Australia Party picking up the vast majority of whatever protest vote eluded the Liberal National Party.

Historic observers of Capers will rightly think this is probably the most political this column has been. Which is probably true. The dilemma we face federally is that the historic bipartisan support for forestry has become seriously compromised by the reliance on the clearly anti-forestry (yes, I will justify that) Greens under the current federal government.

Capers has probably always considered the Greens anti-forestry, having been battered in a number of jurisdictional wars, particularly in relation to access to private native forests, but also in respect of plantations in the landscape. The outcomes of the Multi Party Climate Change Committee in relation to production forestry only serve to strongly reconfirm this view.

10 years but no watch yet

By the time you gleefully torn open your quarterly dose of forestry commentary and flicked enthusiastically to the Canberra Capers column, I will have been at AFG for 10 years. (Times are tough though – no lunch, no watch and no telegram from the Queen!)

It’s kind of unfortunate to have this subject as a kicker to a column about political winds of change, but there is no special announcement… (if there was it would have been at the top of the page not down here).

It continues, however, to be an honour and pleasure to serve AFG. Let me close with a reflection relating to the front and back end of this column. At the conclusion of a meeting with the then Queensland Minister and his advisor, the Minister thanked us, the advisor responded “I’m here to help” and the Minister (very quickly) rejoined with “I’m here to serve.” Hopefully, I’m here to do a little bit of both.
Purpose-built to showcase SEQ’s hardwood timbers

BY SEAN RYAN

As many of you know, the AFG conference will be held in Gympie, with the Ice Breaker event scheduled for the Sunday night of 14 October at the Woodworks Museum.

The Woodworks Museum was built in 1984 as a joint venture between the then Department of Forestry and the Queensland Museum to preserve and display timber industry artefacts. The buildings themselves are of architectural and cultural significance and are a reflection of the great ‘timber and tin’ tradition of Queensland architecture, and were purpose-built to showcase the region’s hardwood timbers.

The boiler was made by Evans Anderson and Phelan Pty Ltd, Kangaroo Point, Brisbane. During part of its life, it was used to power a timber barge transporting logs from Fraser Island to Maryborough. It was later used by S&S timbers, Gympie in a timber treatment plant.

Examining first break flitches fresh from the frame saw.
All structural timber and flooring in the building are of tallowwood and ironbark, milled from specially selected trees. Internal linings and ceilings and external weatherboards are of spotted gum. Fittings such as banisters, doors and window frames are of silky oak. The offices are lined in hoop pine. Traditional methods were used to install the galvanised iron roof, guttering and down pipes and all ironwork throughout the buildings were handmade by the blacksmith at the Imbil Forest Station.

The Woodworks Museum’s pride and joy is the steam powered sawmill (which will be operating at the Ice Breaker event). Opened in 1988, this fully operational replica of a traditional bush sawmill was designed to safely display steam sawmilling techniques to the public. The steam, the smell and sound of the 20hp steam engine and twin blade frame saws, creates an atmosphere that fascinates people of all ages. The sawmill has become an outstanding attraction for steam buffs, timber enthusiasts, school students and tourists.

The structure is impressive. Nineteen tall ironbark poles and huge rafters hold up the galvanised iron roof. The sapped poles are concreted three metres into the ground. The internal viewing platforms have silky oak balustrading and tallowwood flooring. The sawmill’s equipment includes boilers, a steam engine, circular saws, a frame saw and saw doctor’s tools.

The Woodworks Museum is now managed by Private Forestry Service Queensland and is undergoing a major transformation broadening out its function to a forestry interpretive centre, while still maintaining all of the historical attributes of the centre. The first stage of this will be completed by the conference, so we are hoping for a big attendance from all over Australia.

Sean Ryan, Executive Officer, Private Forestry Service Queensland.
Coreen Schnitzerling, Kin Kin valley, west of Noosa

The original tree changers

BY KAARA SHAW

Coreen Schnitzerling’s back verandah looks out over her 47ha sub-tropical paradise towards the eastern slopes of Woondum Plateau. You would be forgiven for thinking that this landscape had never been cleared.

The Kin Kin valley sits at the top of the Noosa River catchment in south-east Queensland, enjoying high summer rainfall, challenging slopes and a short, winding drive to Noosa beaches.

In 1976, Coreen and Herbert Schnitzerling took the leap and bought their dream block at Kin Kin. The property came with a small remnant patch of Gympie messmate, flooded gum and complex notophyll rainforest along some of the waterways. The remainder of the block, like the rest of the Kin Kin valley, had been cleared, cropped, lost its topsoil and left to the groundsel and camphor laurel.

For Coreen and Herbert this was the beginning of their dream to recreate the magnificent rainforest landscapes depicted in W.D. Francis’ book Australian Rain-forest Trees. Photos in the book show enormous trees growing on the Francis’s property at the north-eastern end of Woondum plateau. One photograph shows a giant Southern penda (Xanthostemon oppositifolius) dwarfing a man on a horse.

Like most tree-changers, Coreen and Herbert had to remain working and living in Brisbane to fund their dream and raise their children. With limited knowledge and only weekends and school holidays available, they began a determined effort to reforest their land.

First planting

The first planting began in 1978 with a fertiliser trial organised by David Cameron from the CSIRO. Flooded gum (Eucalyptus grandis) and blackbutt (Eucalyptus pilularis) were planted into hard clay on the steepest hill slopes. Site preparation involved mattocks and hard work.

The next planting was a species and provenance trial, also organised by David Cameron under the auspices of Men of the Trees. Despite underdeveloped planting stock and hard clay sub-soils, the planting achieved a 98% survival rate. The trial included 15 different species of eucalyptus from across Australia. Thirty-one years after planting, the species that are dominating the trial are the local heroes, Gympie messmate (Eucalyptus cloeziana) and spotted gum (Corymbia citriodora subsp. variegata).

In 1985, a mini tornado tore through the young plantings and destroyed the Kin Kin Butter Factory a few kilometres down the road. Young, soft trees were blown over and some crowns were smashed. Four days later, blackbutt in the ‘78’ fertiliser trial started to die back. Upon closer inspection it was discovered that the trees had sheared from their bark, twisting around and leaving the outside of the trees intact (torsional shear).

▶ A rare photo of Coreen standing still in front of a Gympie messmate planting.

▶ Tim Schnitzerling shows farm foresters his sawn Gympie messmate.
In 1986, Coreen and Herbert were ready to begin their first major rainforest planting. Owing to a lack of experience and knowledge about planting Australian rainforest species, Coreen took the advice of forestry professionals, which suggested that rainforest trees could not be grown out in the open without a canopy. Thus, this first rainforest planting was established with a mixture of eucalypts to provide shade for the rainforest species. Needless to say, the rainforest species thrived despite heavy competition from the eucalypts and Coreen soon realised that the overstorey was unnecessary. Coreen thinks that this is probably one of the first mixed rainforest species plantation in the region.

For these initial plantings, the major challenges were a lack of information on growing native trees, severely degraded soils, time and minimal infrastructure – Coreen recalls many trips up and down hills with buckets of water.

Coreen eventually moved up to the block permanently in 1989 and her husband followed in 1991. Herbert, who worked as a research scientist with the CSIRO, sadly passed away only two years later.

**Another 30 plantings**
Coreen continued to establish forests across the property. Poring over an aerial photo of the property, Coreen estimates at least another 30 separate forest establishments after the initial three. Most of the plantings have been strategically placed on all of the steep and saturated areas of the block, leaving any flat and easy slopes to be slashed by Coreen.

Camphor laurels along the creek have been treated and the creek banks revegetated. A red cedar trial was established under the Joint Venture Agroforestry Program. Various funding sources including the Sunshine Coast Regional Council and FarmFLOW have helped Coreen to revegetate and establish commercial plantations. In return, Coreen has opened her property to field days, bus trips, workshops and wildlife buffs; facilitating the sharing of her knowledge and the development of best practice techniques. Five years ago Coreen’s son, Tim, harvested Gympie messmate from her remnant stand, milled it on site and built his house from it.

Over 150 bird species have been recorded on the property, platypus have been...
sighted in the creek and koalas are now regularly sighted feeding and resting in the eucalypt plantings. Coreen now includes a minimum of 10% koala feed trees in all of her new plantings. As a twisted result of her success, the native birds, particularly pigeons, eat camphor seeds on neighbouring properties and drop them throughout the property. One of the biggest jobs for Coreen is keeping up with these camphor laurels that germinate under the canopy of her older plantings.

Walking around the property is an absolute treat. The landscape is a mosaic of eucalypt forest, rainforest revegetation and meandering creek flats. Coreen insists that the key to her success is trial and error; learning from mistakes and adapting to the conditions with which you are faced. After walking around the property with Coreen, this author would have to say that the key to Coreen’s success is her stubborn determination, the consistency of her work, and her absolute passion for native trees and wildlife.

Kaara Shaw, Project Officer, Private Forestry Service Queensland.
Previous to the Matthews purchase of their 16ha property in the Kilcoy district, the hill country was harvested for timber with Eucalyptus crebra and E. tereticornis as the predominant species. Flindersia australis was also found during an audit of species. Silverculture was not part of earlier management. The Matthews identified agroforestry as a potential opportunity, and in 2007 they planted a further 2.5ha of timber to augment the native timber stand. Species were selected to complement the native species on the property supplemented with other valuable hardwoods. This resulted in species selection of E. propinqa, E. longirostrata, E. crebra, E. acmenoides, E. cloeziana and Flindersia australis.

The excessively wet 2011 year caused losses of two plantation species E. coleziana and the E. acmenoides because of drainage issues.

David is improving his native timber stand through thinning by mechanical removal. He told the field day group that “every tree becomes valuable stock, biodiversity or harvestable product. Although a more demanding process, it leaves no standing dead trees as an aesthetic detraction to potential future owners.”

Chainsaw milling options

Andrew Sinclair began the chainsaw milling demonstration at the field day by saying, “The simplest and cheapest option is the TimberJig.”

It’s a frame that mounts on any two bolt chainsaw. You make your own wooden frame and attach it to both ends of larger logs to get a flat starting surface. You then...
re-mount the frame at 90 degrees using either the brackets again or by screwing it into the log in the waste area. You can square up the log completely, but once you have a 90 degree cut, the TimberJig will hang on from its adjustable top plate, at any setting up to 20cm, and rip boards, planks or beams.

The benefits of the TimberJig are the very low entry cost ($280 + your timber frame) and easy storage and transport to a site due to small size and weight. For these reasons, it’s hard to see why anyone with some timber to mill would not have one. But once you start milling a bit more, you can see where the Timberjig’s weaknesses lie. The working position is not ideal and the accuracy depends on the skill of the sawyer. It’s also quite slow for more than one log. The next step up, Logosol’s Big Mill, uses adjustable arms and an aluminium frame to cure most of the problems, but if you start to do even more cutting, the M7 beckons.

The M7 is a frame on which you raise the log to the appropriate height where it’s cut by the chainsaw in a carriage travelling along an aluminium beam. You can rotate the log to enable you to quartersaw, slab or mill almost anything. The pros are accuracy, comfort, speed and flexibility. The only cons are the cost (still under $4,000) and the need to raise the logs onto the log bed.

The most asked question at the field day was, “How does this compare to a Lucas Mill?” It’s smaller, lighter cheaper, better for smaller logs (less than 45cm DBH) and has more flexible cutting options. The Lucas looks better when you have bigger logs and harder timber. If you’re working on very high value wood, the Logosol can be fitted with a bandsaw with a 2mm kerf. You can use standard chains and bars or narrow kerf picco ripping chains on the Timberjig or M7 for faster and smoother cutting. They then have a similar kerf to the Lucas (6mm for the Logosol vs. about 5mm for the Lucas depending on the model).

The Logosol products are available online at www.logosol.com.au including the manuals and links to YouTube demo videos or you can call Sven-Erik Bredenberg on 03 9570 7075 to discuss your needs.
New voice for private forestry on the south coast

BY PENNI HEWETT

Farm forestry and plantation forestry in the South Coast of Western Australia have suffered some major setbacks in the last few years.

With the downturn in the plantation sector, restructure and refocus of the Forest Products Commission, removal of funding for Private Forestry Development Committee (PFDCs) and the general lack of policy direction from all levels of government – growers and others involved in the industry have been left without a voice and access to information.

To address this gap, the Australian Forest Growers provided an opportunity to establish a new branch on the South Coast of WA so growers and interested parties had a forum to discuss forestry, agroforestry and plantation industry issues.

Bill Hollingworth from Bandicoot Nursery and Penni Hewett from South Coast Natural Resource Management Inc. organised the inaugural meeting on 24 February at the South Coast NRM office in Albany.

Mr Hollingworth said he was pleased with the turnout of 14 keen and like-minded people, with apologies and positive comments from a further 11. South West WA branch executive officer Richard Moore attended from Bunbury to share his experiences in establishing his branch of the AFG.

“We are grateful for the support of South Coast NRM in getting the group up and running,” Mr Hollingworth said. “The committee plans to meet again to set the format for the rest of the year, and to develop a statement of purpose for the branch, which sets a solid foundation for all going forward.”

The AFG South Coast Executive Committee comprises Bill Hollingworth (Chair), Alan Hordacre (Secretary/Treasurer), James Kernaghan, Heather Adams and Kim Brooksbank (Committee Members).

For further information or to be involved in future meetings, contact Bill Hollingworth on 0448 513 802 or Alan Hordacre on 0428 416 386.

Penni Hewett has over 20 years’ experience in forest and plantation research and management. She lives in Albany with her husband Gavin Ellis and three children. She and Gavin grow trees for multiple uses on their farm in Manjimup, and breed cattle on their Millbrook property near Albany. Penni works for South Coast NRM as the Land Program Leader.
A Tree Improvement Program for African mahogany (*Khaya senegalensis*) was initiated in the Northern Territory in 1999 after assessments were undertaken of provenance trials established at Gunn Point (60km NE of Darwin) in the early 1970s, prior to the devastating cyclone Tracy in late 1974. Experimental planting of the *Khaya* provenances were also established at sites on Melville Island, approximately 90km north of Darwin. With site maps and layouts more than 25 years old, the assessment team were able to locate and identify all 24 provenances from 11 countries of nativity originally planted by CSIRO for evaluation in Northern Territory conditions.

All trees were measured to calculate timber volumes and assessment made on tree form and health. The best trees from each provenance were identified, numbered and girdled with a view to induce juvenile shoots low down on the tree trunks. Realising the insecurity of the sites, exposed as they were to fires, cyclones, development proposals and a lack of management, an urgent need to conserve the genetics of these valuable trials was identified. Consequently, the Northern Territory and Queensland governments agreed to collaborate on a tree improvement joint venture with *Khaya senegalensis*.

Scion material was collected from all selected superior trees from all provenances, then grafted onto root-stock and planted out in clonal seed orchards (CSO) at two sites close to Darwin in early 2001. In 2003 a CSO comprising similar genetic material was established in north Queensland. Stage one of the Tree Improvement Program was completed; now there was the wait for flowering and seed-set.

Assessing timber quality

Meanwhile, there were still cynical views in the timber and furniture industries regarding the quality of African mahogany timber from local sources. An opportunity arose through RIRDC, supplemented with funding from both the Queensland and Northern Territory Governments to conduct an evaluation on the wood quality and potential uses of the timber. Logs were sourced from these older mature stands at Gunn Point and Howard Springs near Darwin in 2003. The outcomes of the study were most pleasing as was reported in *Forest Grower*, summer 2005 (Vol. 27/1). The 38 trees sampled produced high value timber suitable for high value applications.

The study also revealed a number of issues that negatively affected recovery of high value appearance grade timber, namely wandering pith, varying proportion of heartwood, short boles, large branching habit and the development of decay and stain resulting from unpruned broken branches allowing decay to enter the inner heart. All the identified issues could be addressed through breeding and appropriate silvicultural management. Results were published in RIRDC No. 07/107, Project No. DNT – 32A by Armstrong et al.

Following this important study, further evaluations of several of the selected trees were undertaken in the NT utilising seed from some of the felled trees to establish a hedge garden in 2004 for clone testing. A similar facility was established in north Queensland in 2005 using a sub-set of cutting material from the NT hedges. Cuttings have been collected from the NT facility for more than six years, propagated to produce ‘rooted cuttings’ and deployed in the field at more than 10 sites, beginning with plantings in 2005 to identify superior clonal types and match genetic types to various environmental conditions. Remembering this unique conservation and genetic improvement program has

### Second generation trials seeking superior clones for Khaya

**BY DON REILLY**

A forestry research officer with the NT Government, Don Reilly has for the past 13 years led a collaborative research program between the NT and Queensland governments aimed at evaluating and identifying superior genetic material of African mahogany. After reading Ray Fremlin’s more general piece on *Khaya* in the recent summer edition, he asked if he could report in details on trials last covered by *Forest Grower* over seven years ago.

A rooted cutting tree of clone number 82 planted in March 2007, now 5yo at a site in the Douglas Daly, NT. It is one of the top performing clones at this site. The adjacent tree (in the foreground) is another promising clone. Note the many multi-stemmed and forked trees in the background, which comprise trees of control stock and poorer clones. The trial design is ‘single-tree plots’ hence all trees shown are of different origins.
A vast range of genetic material from sub-Saharan Africa adapted to a range of climatic and soil conditions.

To assist the rigidity of the data in the clone tests, seedling controls were always deployed in tests; they usually comprised of Darwin street tree (DST) seedlings and/or recent introductions of seed by the plantation companies from Africa, most notably from Burkina Faso in western Africa.

### Table 1: Early results of evaluation of selected clones, seedling controls and African provenances

<table>
<thead>
<tr>
<th>Clone test</th>
<th>Site &amp; (age) at measure</th>
<th>Entry</th>
<th>Growth rate</th>
<th>MAI (m3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>D/Daly</td>
<td>D/Daly - (4.3 yrs)</td>
<td>Top 13 clone Nos.</td>
<td>46.6m³</td>
<td>11.1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DST (n = 51)</td>
<td>25.3m³</td>
<td>5.8</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Senegal #4</td>
<td>35.3m³</td>
<td>8.2</td>
</tr>
<tr>
<td>Katherine</td>
<td>KRS - (4.8 yrs)</td>
<td>Top 10 clone Nos.</td>
<td>43.8m³</td>
<td>9.1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Top 50 clone Nos.</td>
<td>35.9m³</td>
<td>7.8</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DST (n = 124)</td>
<td>19.1m³</td>
<td>4.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Burkina Faso seed (n =110)</td>
<td>24.0m³</td>
<td>5.0</td>
</tr>
</tbody>
</table>

### Significant clone differences

Despite the relatively young age of the trials, less than quarter way through an expected rotation of 20 years, data analysis show significant differences between the best of the clonal material and the seedling controls. At a site in the Douglas/Daly, the better clones are growing at nearly twice the rate of the seedling controls and in Katherine (further south), the top 10 clones are growing at more than twice the DST controls and 1.8 times more than the Burkina Faso controls. The research group has had access to provenance trials utilising seed from wild collections in Africa established by industry and DoR in 2007 on a site adjacent to the clone test in the Douglas/Daly. This included a provenance from Senegal that has reportedly been performing well in this and other provenance trials conducted by plantation companies.

The last column of the table indicating Mean Annual Increment is a measure of the volume of timber being grown per hectare per year and can be used as an economic indicator of the volume of timber grown. This can then be extrapolated to the expected rotation in years, i.e. 11.1m³ x 20 years = 222m³ per hectare.

Using the same calculations and information in the table, the MAI for DST at the same site is 5.8m³ x 20 years = 116m³ per hectare. Again, using the same information, the MAI for Senegal #4 (the plantation company has nominated this provenance as their preferred option at present from wild collections) is 8.2m³ x 20 years = 164m³.

Genetic gains evident from the first generation clone tests have been substantial over a relatively short time, demonstrating improvements are possible. The quality of genetic material being deployed by plantation companies in 2012, where more than 13,000ha have been established, is the same as that used in the first commercial deployment in 2006 and such stock might continue to be used until improved material is available.

One potential immediate source of some improved material is open pollinated (OP) second generation seed. This is now being produced annually in small amounts from the CSOs in the NT (since 2008) and Queensland (since 2010) and deployed in second generation progeny trials where preliminary results are most encouraging. The prospect of controlled pollination of the better clones in these CSOs could be expected to yield seedlings exhibiting greater gains than those obtainable from bulked, OP orchard seed.

Further collaborative work with University of Sunshine Coast, DEEDI (Qld), DoR (NT) and a number of commercial plantation companies through the Smart Forests Alliance-Queensland, has provided valuable information on the flowering biology of this species. A potential has been identified for in vitro propagation by developing protocols for shoot proliferation and plantlet formation from seed embryos with the use of plant growth regulators.

Don Reilly has been working for the NT Government for over 23 years in researching agricultural systems. For the past 13 years he has been working as a forestry research officer with the Department of Resources, Northern Territory. Over that time he has gained experience in nursery propagation systems, silvicultural trials and more recently the African mahogany tree improvement program.

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**Don Reilly.**
Where did all my value go?

As forest and plantation managers, getting the most value possible at the time of harvest is critical to financial success. It is at this point, the time of harvest, when years of effort to build value can be destroyed in a few minutes by poor choices and management decisions that on the surface seem pretty straightforward.

Studies around the world, including both large and small scale operations, show that on average 15-20% of the value that could have been achieved is lost at the time of harvest and losses of up to 60% have been noted. Yet often a great deal of care and effort is applied in the establishment and management of the trees through their life.

The obvious question is how – with so much care and effort into building the value over years – can it slip away in the last few hours? In many cases, it is an accumulation of many small things that alone don’t seem important, so are not paid much attention, but when accumulated have a real impact on the value obtained.

Over the last seven years, the CRC for Forestry’s harvesting and operations program has undertaken research to better understand the issues that reduce value in Australian operations and what approaches could be taken to better manage them.

<table>
<thead>
<tr>
<th>Head type</th>
<th>Value lost in stumps &amp; kerf ($/ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chainsaw</td>
<td>251</td>
</tr>
<tr>
<td>Hotsaw</td>
<td>203</td>
</tr>
<tr>
<td>Shears</td>
<td>16</td>
</tr>
</tbody>
</table>
Getting the right equipment

Like any job, having the right tools can make all the difference and many CRC for Forestry trials have focused on this. What was of interest to the CRC is how different systems perform in different conditions so that the least costly harvest systems can be applied to ensure more of the tree value goes to profit.

In one case, we found when thinning native regrowth forests in moderately hilly terrain, a commonly used system with a feller buncher and processor was up to $14 per tonne of wood-produced more expensive than when deploying a single multifunctional harvester to do the same job. While there are other considerations to the decision about a harvest system – like the products it can produce and the impacts on the site – cost is a big one and needs to be well understood to ensure the best value is obtained from the forest.

Looking at more specific details, what is the impact of the type of felling head used on how much wood was actually harvested? In looking at three common feller buncher head types, all of which are used in blue gum harvesting and been shown to be very cost effective, there is a remarkable difference in the volume of wood they can actually deliver to road side. Depending on the type of head, up to 3.5% of the volume is left in the stumps and lost as sawdust in a relatively good stand; not a big percentage, but it can add up to over $200/ha.

Figure 1 shows the different volume losses for each head and Table 1 shows the related lost value for a stand yielding about 230 m³/ha. Again, like the earlier example, more than the volume recovery will drive the decision, like the quality required in the butt logs, but equally it is a decision that needs to be balanced with good knowledge about the trade-offs.

Getting the highest value products possible

Forests grown for high quality solid timber products are those that have taken the greatest time and effort to build value. Even in relatively closed markets with limited customers, these trees will need to be processed into a number of different log products with dramatically different values depending on size and quality.

It is these harvest operations that have the greatest potential to either increase or reduce the value achieved depending on the decision made about which products to cut from each tree.

This is an area where technology has greatly improved harvesting and the value achieved; and based on recent CRC for Forestry trials also at a lower operating cost. Most multifunctional harvester heads come with the ability to measure stem diameter and length as the tree passes through the harvesting head. Combined with knowledge of the required product dimensions, the relative value of the different products and some basic operator inputs on quality features (knots, sweep, etc.), this allows the computer of the multifunctional harvester head to make automatic, optimal decisions about what products to cut from each tree.

Looking at more specific details, what is the impact of the type of felling head used on how much wood was actually harvested? In looking at three common feller buncher head types, all of which are used in blue gum harvesting and been shown to be very cost effective, there is a remarkable difference in the volume of wood...
A recent CRC for Forestry study looked at the difference in value achieved for an area given a limited market between allowing the operator to make the product decisions and using the optimisation feature with quality inputs from the operator. Figure 2 shows how there was a small shift in the mix of products towards the higher values, particularly a reduction in pulp and increase in 6.1m logs. The result was a $1/m³ increase in value achieved, as detailed in Table 2. It was also noted in the study that because there was less demand on the operator to make decisions about what products to cut, the productivity of the harvesting operations went up by 7-9%, which significantly reduces the costs on top of the value increase.

Getting all the products possible
As important as getting as much of the most valuable products possible, is making sure you get all the products. With time, the products that can be sold from a timber harvest change, and what was waste only a few years ago may now be biomass with potential use in panel production, gardening or energy. In seeking new opportunities to add value, CRC for Forestry partners have shown considerable interest in understanding how to effectively recover those parts of the stem that often get left on site as residue without over-harvesting the site and removing too many nutrients, which tend to be concentrated in the leaves, needles and fine branches.

The CRC for Forestry has done a number of trials exploring techniques and technology to harvest biomass, most of which is commonly used in Europe. Some of these systems have shown promise in Australian conditions, particularly when integrated with existing operations. Figure 3 shows a relative cost comparison from the trials conducted.

You will note the Bruks chipper was trialled with a number of harvest techniques and provided the best cost outcome when integrated with an existing timber harvest by chipping stem residue, which had been extracted to roadside (cost included) along with the timber harvest.

Equally interesting based on cost was the fibre plus approach. Like the Bruks trial with roadside chipping, the Fibre+ trial extracted the residue stem wood with the normal timber harvest. There was no additional cost for the harvesting equipment and, primarily because the trial was not equipped properly to handle short logs, the extraction cost was increased by about 14%. It was acknowledged by all the project participants that this impact could be reduced to under 5% with the right operational planning and equipment set-up. On the value side, the operation produced roughly the same amount of fibre plus material as pulpwood (Figure 4), providing a considerable volume of new product to help add value. It should be noted a considerable amount of material was left on site to ensure site sustainability.

I hope I have provided an overview of some of the options available in forest operations to help you get better value, but I must stress this is only a sample of the knowledge on improving value in forest operations done by CRC for Forestry. I also hope I have helped seed the idea that when the time of harvest arrives is not the time to lose sight of increasing value, but rather a good time to redouble your efforts.

For more information, contact the CRC for Forestry: www.crcforestry.com.au or University of the Sunshine Coast where the CRC for Forestry is to be relocated.

Mark Brown is the Professor of Forestry Operations, University of the Sunshine Coast, Operations Program Manager and Manager of Industry Engagement – CRC for Forestry.
Westem Australia

Be prepared for hard physical and capital investment when ‘going it alone’

During 1991-2011, he planted a range of species in blocks including *E. saligna*, *E. botriodes*, *C. maculata*, *E. muelliania*, *E. globulus* and several specialty indigenous WA eucalypts. Adjacent forests are recognised as providing ecosystem services to the plantation and benefit from a program that aims to control fuel levels and promote biodiversity, as well as provide wood production. Current annual production from the 300ha estate of logs is 1,000+ tonnes of logs and 10m³+ of sawn timber. This is forecast to increase to 2,000 tonnes and 100m³ in the next five years.

Commercial harvesting (as a result of the third thinning) of the plantations is delayed until 10-15 years to take advantage of the larger piece size and therefore lower-scale technology equipment requirement.

The main lesson I have learnt in regards to harvesting is that if you are focused on high intensity management (that is, frequent heavy thinning) to produce large logs quickly, you tend toward small scale plantation compartments where the trees have large branches in the crown as well as large boles. As a consequence of this, machine harvesting is not an attractive option given the economies of scale, the geometry of the crown and the risk of damage to either retained stems, or (in the case of clearfelling) pruned portions of the harvested trees.

This means that you have to be prepared for the hard physical work and capital investment to ‘go it alone,’ or you need to be larger scale and preferably close to residue log markets to make ‘one hit’ machine thinning work. Crucial to this is having access to skilled machine operators.

Harvesting process

The first step in the harvesting operation is to ensure adequate access for long vehicles to haul the product. This is actually achieved progressively over previous years as part of preparing the plantation compartments for summer wildfire. Landings are positioned at either end of the rows.

The next task is to mark trees for retention (that is, the final crop trees) and demarcate the extraction lanes to forward the logs.

A Stihl MS 362 fitted with a 45cm bar is the primary machine for directional hand-felling. The trees are felled precisely so as to minimise damage to the final crop trees and spread the resulting slash evenly throughout the stand. Tops that land on the perimeter firebreak are immediately chipped by a PTO-driven brush-chipper and sprayed back into the plantation edges. This maintains optimum access and fire protection.

Harvesting trees usually average 35cm DBHOB and produce three logs 3.6-4.8m in length. The logs are then debarked with a dedicated log-grab mounted on a Komatsu PC-120 tracked excavator and presented in bunches of two or three in the lanes immediately adjacent to the extraction lane. Average log weight (bark off) is 250kg.

Logs are then forwarded to the nearest landing on a Moheda 155-4WD log trailer towed by a JD 6630 92 kW tractor. The payload of 10-12 tonnes is delivered to the nearest landing to eventually be loaded on a truck and carted to the customer.

Over 50% of butt-logs are suitable for milling into sawn timber, but sawmills (and the final consumer) in WA are not yet sophisticated enough to accept this product.

The following production rates have been observed in this type of operation in average to high quality stands:

- Manual harvesting: 2.5-4.5t/hr;
- De-barking, sorting and bunching: 10t/hr;
- Extraction: 20t/hr;
- Loading: 40t/hr;
- Total yield: 50-75t/ha.

The author is a full-time farm forester managing 100ha of forest and 150ha of plantation in south-west WA for high quality sawlog production. The main focus of his plantation silviculture is to produce the largest sawlogs in the shortest possible time frame.

By Geoff North

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- Loading: 40t/hr;
- Total yield: 50-75t/ha.

The following production rates have been observed in this type of operation in average to high quality stands:
In 1999, when we bought our plantation land, it was a dry year, so the low lying areas were firm and trafficable. During planting in 2000 just about everyone who visited the block got bogged. Around a quarter of the planting was delayed until 2001 due to the poor ground conditions. Eventually the plantation was established successfully and grew well – above average for the region.

At the time of establishment, haulage contractors were using a mixture of single and B double configuration haulage, but since then haulage has moved exclusively to B doubles – associated with higher requirements for the quality (and cost) of the roads needed to get products out of the forest. The Green Triangle region has a well developed roading network, but this does not prevent roading being an issue within individual new plantation areas.

The first thinning in autumn 2011 was arranged under our Farm Forestry Agreement with Green Triangle Forest Products Ltd, with the products (pulpwood and MP mainly) being sold to export markets and Kimberly Clark Australia. The operation struggled with plantation access and we undertook one planned and two ‘emergency’ roading operations to keep the product flowing. Despite this, in late April we decided to cease the thinning operation as conditions were too wet to continue, leaving around a quarter of the plantation unthinned. The proceeds from the harvesting operation before roading costs were $50,500, but roading costs totalled nearly $30,000.

**Plantation design**

A major consideration of plantation design is to facilitate the forwarding and haulage of harvested products. The solution that minimises roading costs is often also the solution that minimises roading environmental impact. Put another way, the more you have to mess with the landscape, the greater the roading costs and the bigger the environmental impact. It is necessary to find the right compromise between internal plantation product movement (forwarding) and product movement on roads and tracks (haulage). Bear in mind that room is needed to accumulate and load products on relatively flat and firm ground. Landings can be created by clearing some of the existing plantation, but, especially for multi-thinned plantations, it is best to provide these areas from the start.

In the Green Triangle, a within forest forwarding distance of 500m is the typical maximum before higher forwarding rates are incurred, but it may be better to incur a higher forwarding cost for a small part of your plantation rather than build an expensive road. Haulage routes should ideally be circuits to...
improve safety and smooth traffic flow and decrease the need for expensive turnarounds.

Timing
Timing is everything with forest roading. I have often heard people say “build the road now and it will be there forever.” To me this is financial folly as illustrated in Figure 1 above. This example shows that you are much better off keeping the money in the bank and building roads “just in time” than investing in roading upfront. But what is “just in time”? Typically, the major roading activities for the harvest of a multi thinned plantation will be just prior to first thinning to remove 80-100 m³/ha of product, and just prior to final harvest to remove 300-600 m³/ha of product. Second and third thinning operations usually require minimal extra. It is usually prudent to complete the roading up to 12 months in advance to give some time for consolidation. Doing roading this far in advance gives you the ability to work with the contractor to minimise the costs of getting equipment on site and to ensure that rubble is sourced from the closest/cheapest location.

The “Oh, oh – too late” strategy is the worst of all, but may still happen in extraordinary circumstances such as the very wet summer/autumn of 2011. “Oh, oh – too late” means laying rubble on unconsolidated ground, which sucks up huge volumes (and $$$). Further issues are conflicting haulage and roading operations, and higher ‘emergency work’ contractor expenses. “Oh, oh – too late” can be very messy environmentally. Early closure of the harvesting operation (as we did in our case) may be the best option when you land in an “Oh, oh – too late” situation.

Listen to the voices of experience
Forest product haulage is different to other forms of rural product haulage due to its intensity and the need to haul from places where a 65 tonne truck has never been before. Ground conditions can vary markedly from one section of a property to another and dry bogging in sandy areas during summer can be as much of a problem as wet bogging on heavier soils in winter. Reading the subtle changes in soils and terrain and understanding what this means for maintaining a haulage operation at a particular time of year is one of the finer arts in forestry. Get advice from someone who has extensive on ground

Figure 1: Financial rationale for ‘just in time’ roading.

<table>
<thead>
<tr>
<th>Strategy</th>
<th>“It will be there forever”</th>
<th>“Just in time”</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Activity</td>
<td>Cost (@ yr 0)</td>
</tr>
<tr>
<td>0</td>
<td>Road building - 3 Km</td>
<td>30,000</td>
</tr>
<tr>
<td>12</td>
<td>Patching during first thinning</td>
<td>1,000</td>
</tr>
<tr>
<td>32</td>
<td>Patching during final harvest</td>
<td>1,000</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>32,000</td>
</tr>
</tbody>
</table>

All costs discounted to year 0 at the real discount rate of 5%
experience in your area if possible. Get more than one opinion and balance the optimists with the pessimists.

**Be specific and be there**

Most smaller forest growers do not have their own roading equipment so rely upon contractors to complete roading work. The standard and cost of work carried out by these contractors can vary significantly as we found out. Before and during the thinning, three turnarounds had to be built to provide truck access. The first of these was done before the operation commenced and used approximately six loads of rubble, the second was similar, but the third ended up becoming a very expensive super helipad costing (probably) twice what it should have.

Why? We weren’t there during the last operation to keep things in check; we weren’t specific enough with our instructions; and the contractor used a less experienced grader driver who was used to building highways. Once the rubble is laid it’s hard to argue about the invoice. This proved an expensive lesson.

**Within operation timing management**

Beginning harvesting operations in the areas that will become inaccessible later can significantly reduce roading costs and result in the operation being completed. In our case we missed a window of opportunity to thin the most productive section of the plantation by working in one of the easier access areas first. While there was a good reason for this at the time (to cut a product for a particular market), it backfired on us in the end.

Cooperative access arrangements with neighbours are often the best solution for both parties. There is no point building a new road when the improvement of a road on a neighbouring property can serve the purpose.

Andrew Moore has been working in radiata pine plantation forestry for the last 25 years after completing a forestry degree at the University of Melbourne. He is the Technical Manager at Green Triangle Forest Products, a role that involves business information provision and financial analysis.

Clearfell harvesting of final-crop, wide-spaced, pruned plantation is practiced using a hydraulic log-grab mounted on the tractor’s three-point-linkage. It has a four ton lift-and-skid capacity. Trees are felled using a Stihl MS 441 with a 45cm bar and an MS 660 with 50cm bar. Pruned sawlogs are cross-cut at the stump enabling tops (consisting of chiplogs) and sawlogs to be skidded to the landing and separated there.

The remaining stumps are ground using a PTO-driven stump-grinder leaving a clean site for re-establishment of the next crop. As this type of harvest has only been conducted a few times no reliable figures for production have been assessed. Yields from 50-60cm DBHOB trees are likely to be 200-350t/ha with a 50/50 sawlog/chiplog mix.

To give some idea of the costs of going it alone, the approximate costs of purchasing harvesting machinery at each of the stages mentioned above are as follows. The smallest investment (around $10-15,000) of tractor with FEL, chain and chainsaw will result in high labour requirement and low productivity. This will also make loading a slow and hazardous operation. Adding a skidding attachment to the tractor ($10,000) will allow a single operator to be reasonably productive in large diameter timber. To have both shortwood and longwood options including a dedicated loading machine will optimise production at a cost of $150-300,000.

I feel strongly that nowhere near enough support is being offered by all levels of government for small scale, high value farm forestry. In short, there needs to be increased privatisation of native forest logging (that is, more realistic economics in setting public forest returns to government), more scrutiny of wood product imports, and a differentiation so far as planning permits are concerned between farm forestry plantations and industrial-scale plantations for lower quality timber production. There’s something there for all three levels of government to consider.

Geoff North has been practising farm forestry for 20 years and is qualified in hardwood falling and shotfiring and has a BSc from UWA. He has developed the family farms from scratch with no full or part-time employees and only utilising contractors for pruning and some of the first and second thinning operations. Photos by S. North.
Harvesting timber can be an exciting time in the cycle of forest management. Occurring perhaps once only in a generation, it is often the primary income flow from a forest so it is important to get the job right.

Whatever type of farm forestry you engage in, when it comes to timber harvesting you want the highest value for the timber harvested and the retained stand left in the best possible silvicultural condition for future growth and enhanced property and biodiversity values. Timber harvesting is a highly skilled and hazardous occupation. ‘Good contractors,’ who are multi-skilled and trained professionals, are as rare as hen’s teeth and highly sought after by the forestry, mining and construction industries. So how do you compete for their services and engage a good contractor and keep them on the job?

Be very clear
First, be very clear in your communication. What do you expect from a timber harvest contractor? You can assist by supplying an inventory of your forest with likely quantities of timber products available for harvest and a forest operations plan detailing how the forest must be harvested and sensitive areas protected.

If you have a larger harvesting project, you might consider advertising or tendering the work. Seek references from people who have had property harvested by the contractor or from sawmillers they have supplied. It is always a good idea to have a simple written agreement signed by both timber owner and contractor setting out both parties responsibilities, such as compliance with any codes of practice, protection of assets (fences, gate, retained trees), safety standards, accounting procedures, price and payment terms.

A good contractor has well maintained equipment in good condition suitable for the task. For example, a dozer is best for steep country or for safe loading an excavator or wheeled fork loader with log grabs. Matching the machinery size and configuration to the forest is key to efficient harvesting.

Health and safety are paramount
Workplace health and safety are paramount. A good contractor will have a documented safety management system that demonstrates ‘due diligence’ and ‘duty of care’ for their employees and others on the worksite. Among other things, the SMS details the contractor’s:-

 Occupation health and safety policy;
 Company details;
 Hazard identification, risk assessment and management;
 Safe work procedures for all their activities;
 Medical emergency evacuation procedures;
 Skills accreditations register;
 Training requirements and consultation opportunities for all employees; and
 Record of independent work site audits.

Typically, a good contractor will have safety and contact signs displayed at the entrance to the harvest area; secure the worksite by a fence or barrier; induct all visitors and the forest owner to the worksite; wear appropriate PPE (hard hats, hi-vis clothing, hearing and eye protection); and implement stated safe work procedures.

Other issues to check
Environmental compliance applies to plantation and native forest harvesting via codes of logging practices applicable to each state or regional area. Your site specific requirements should be detailed in the forest operations plan (FOP) and supported by a map showing roads, dump sites, drainage line crossings and flora.
and fauna protection areas. A good contractor will be intimately familiar with the FOP and code of logging practice and have copies on site for daily reference and discussion with you.

Payment terms and price should be specified in the contractor’s agreement. A hand shake with a contractor’s promise to “pay top dollar” is no price at all and gives you no security whatsoever. Timber is commonly sold by volume measure on a cubic metre basis, but can be sold by weight or lump sum price for a defined area of timber land. Timber prices will vary with timber size, species, log quality and location among other things, but it’s important that you have done your research to ensure you are paid fair market prices.

Log grading/product segregation. Whenever you sell multiple products to one or more timber processors you want to be sure the contractor is competent and fair in product segregation. For example, a hardwood pole incorrectly graded as a salvage log results in an 80% loss in stumpage value to the timber grower. On the other hand, sawmillers will refuse to accept your timber if it is persistently graded above its potential sawn-wood recovery value.

A log-grader’s certificate is a mandatory accreditation for a contractor. A quality log grader can make a huge difference to your average revenue ($/m³). Also important is experience in log grading, familiarity with local area timber quality and the capacity to identify characteristic defects associated with some species.

Once on the worksite, it is prudent to monitor operations and communicate regularly with the contractor about progress, environmental compliance and daily production levels. As far as possible, the operation should work to a planned order. Every graded log that goes on the truck should be recorded on a delivery docket for each load and show log dimensions, species, product code and destination of the load.

Carry out checks on the accuracy of the work being performed by the contractor as an essential part of your own due diligence. There are routine log delivery docket procedures to account for all timber. Correct recording is most important as the log delivery docket forms the basis of invoicing to timber receivers and payments to contractors and haulers.

Lastly, it’s a good idea to keep a daily diary of work progress and requests to the contractor to carry out timely works such as track drainage and disposal of bark. Your agreement with the contractor should include a signoff process verifying that all work has been completed to the satisfaction of the timber owner. Sometimes wet weather causes a temporary cessation to harvest operations, but plant and equipment should not be moved offsite to work elsewhere without your approval.

Michael Combe is a career forester and the Resource Manager for Koppers Wood Products Pty Ltd responsible for hardwood pole supply to Koppers treatment plants at Grafton (NSW), Takura (Q) and Longford (Tas). Michael and the Koppers pole procurement team coordinate poles and log supply from up to 25 harvest contractors from private native forest and plantation and have contract harvest teams operating on State Forest in NSW and Queensland. His mobile is 0429 907 490.

▶ Excavator with grab: the premier machine for log debarking, sorting and loading.

▶ The Bell feller-buncher has zero turn capability, can be transported on a tilt tray truck and is very effective up to a 20 degree slope.

▶ Forwarders are extensively used in high volume plantation work.
Taking control of your logging is the way ahead

BY FRANK AND ROBERT O'CONNOR

A family owned property situated in the Midlands of Tasmania, ‘Benham’ has a long history of forestry with most areas having been cut over between three and four times. Benham’s forests have, however, only been commercially managed since 1970, when a strategic decision was made to implement a selective logging program focused on increasing and maximising the value of the timber resource and establishing a sustainable high quality, self-replacing timber crop for future generations.

Benham consists of a mix of low land, low rainfall arable land with river frontage, running back into generally non-arable, timbered high land country with higher rainfall. Annual rainfall ranges from 450mm on the low country (200m) up to 900mm on the high country.

Traditionally a grazing business with a long history of producing superfine wool and Angus cattle, in recent years Benham has progressively been diversifying into a modern mix of cropping and livestock enterprises, through investments in irrigation and the introduction of higher production systems to the business. In addition, the property has an important forestry enterprise consisting of approximately 10,000ha of predominantly E. delegatensis forest all of which is between 400-769m in altitude.

Most of the property has now had one commercial harvest and recently the first select coupes have had their second commercial harvest in the rotation under a sale of timber agreement to a local timber company. Initially, the results of the second harvest operation were disappointing, with returns showing similar segregation ratios of higher value products to that of the first commercial harvest. It quickly became obvious that there was great potential to make large gains in productivity within the harvest operation, which would directly translate into higher returns. Through a series of events the opportunity arose for our business to perform and manage our own harvesting operation.

A highly skilled, hand-picked team was assembled and a company structure was established. Two key positions were identified as key to the success of this venture. The team was led by an experienced manager, who was focused on achieving the results defined in setting up the company. Second, in order to maximise returns through better segregation, an experienced log classifier was employed to manage the landing and maximise recovery of higher value products. A private consultant was used to draw up and oversee the implementation of forest practice plans.

All equipment was hired under commercial dry hire arrangements in order to manage risk in the initial stages. Initially, the harvesting company acted as a contractor, which was employed by and under the direction of the forest company to whom we sold the timber. Later, in an effort to combat volatile...
markets, a strategic decision was made to market our own timber directly to processors. At that time, markets for higher quality pulp were limited, but there was an outlet for lower quality pulpwood and higher value products such as peelers and saw logs. As a result of having greater control of operations, it was possible to adjust operations to cater for these markets and focus on areas of lower grade timber, avoiding the areas that had large volumes of higher quality wood products.

**Key findings**

There is potential to make large gains in productivity and returns through better management of harvest operations. Advantages in managing harvesting operations yourself are greater control and a much improved recovery of higher value wood as a result of better segregation. Standard industry logging rates and their structure do not encourage contractors to segregate products according to highest potential value and returns to the producer. Higher prices for saw logs were attained as a result of direct negotiation with some customers.

We gained a better understanding of our product and the market as well as greater control over trucking and loading times improved our efficiency. You must know your markets and understand and monitor the conversion ratios between weight, measurement and wastage in your forest when assessing markets.

A different attitude to harvesting resulted in less damage to the future resource and the environment.

Other lessons learnt were:

- It is difficult to class logs into more than four products due to limited space on the landing;
- Small gains in efficiency are the difference between profit and loss;
- The contractor needs some control over trucks. Trucks arriving during normal production work hours cause the landing to shut down while the truck is loaded;
- Logging is highly cash flow dependent.

**Disadvantages**

When you own your own harvesting business you incur considerable costs, which mount up quickly. Hire costs, wages, fuel, insurance, administration and compliance costs are considerable. The cost of running the operation worked out at very close to $50,000 per month. We soon found that although you were obligated to pay all your costs on time or in advance, income was slow to come in and in the present climate, far from certain.

Considerable time had to be devoted to the business. You are responsible for the preparation of forest practices plans, and although we paid an independent forest practices officer to prepare them, we were responsible for their implementation. This includes meeting all requirements for rehabilitation, regeneration, burning bark heaps and road building and maintenance. These costs in the past were born by the forest harvesting company.

Risk management is a problem whether it is from market failure or exposure to bad debts.

We operated for about nine months and during that time it became obvious to us that there was a lot of room for improvement in timber harvesting and marketing on private land in Tasmania. We were eventually forced to shut down our operation as a result of a very wet season and difficult market conditions. We were owed a considerable amount of money by customers and were concerned that payment might not be forthcoming. I am, however, pleased to report that although some payments were up to six months in arrears, we received all outstanding money.

Harvesting your own timber will not suit everyone, but after the experience we had, I urge all private timber owners to take much greater responsibility and adopt a proactive role in reforming the future management, marketing and harvesting of our forests. We will not get the outcomes we want if we blindly accept the status quo.

Frank O’Connor has a Diploma in Farm Management and took over management of the family farm in 1971 at the age of 23. Frank still lives on the farm and assists son Robert in an advisory role particularly in matters relating to wool and forestry. Following in his father’s footsteps, Robert has a Diploma in Farm Management and was appointed manager of the family farm in 2003 at the age of 25.
The difficulty in achieving cost-neutral first thinning

By Andrew Lang

I am one of thousands of farm foresters across Australia trying to minimise the net cost of first thinning of sawlog woodlots. Most of these had been planted with the encouragement and financial support of state and federal government policy. Now that policy support has disappeared, non-industrial tree growers are feeling very alone.

In our case we need to thin 10-20ha/yr of our mostly 80m-wide belts of hardwood sawlog plantings. My obvious first choice is to get in a harvesting contractor, but even his smallest harvesting machinery is quite large, and there is no developed market for the product. Alternatively, I have to tangle with the personalities and ethics of local woodcutters, whose preference, if unsupervised, will be to cut the larger better-form trees.

In Sweden or Finland, all growers have ready access to local contractors doing thinning using light wheeled thinning harvesters fitted with a small accumulating head, with the material taken off site by a smaller forwarder, or possibly a tractor-drawn forwarder fitted with a crane and grapple. These machines are all quite narrow and designed for high work rates with small piece size material.

The biomass removed from the Scandinavian thinned native species random-spaced stand will be chipped at the landing, and go under a forward contract to some local or regional heating plant or a combined heat and power (CHP) plant. The forest owner makes some net income, the contractors make better than costs, the region will have employment and income from exported ‘green’ electricity, and the nation has replaced imported fossil fuels with energy from renewable sources of biomass.

For the second thinning, a heavier machine – maybe a 13 tonne Sampo 1066 or similar sized Rotne, would come in and do this, with the material taken off the site being split into at least three products and possibly five. These would include small sawlogs, peeler veneer logs, pulp logs and biomass material. Another category may be fuel wood for household fireplaces and saunas. An 8 wheeler full-size Valmet, Ponsse or similar harvester would be used for the final harvest, with the five categories of product being sold to one or more buyers, who would collect by self-loading, self-weighing trucks.

None of anything

But around Lismore Victoria, despite the 250ha of young dispersed farm sawlog woodlots (and scope for 10 times that area), there is no heating system supply contractor with a chipper, and no forestry contractor with a small to mid-size harvesting machine to do first thinnings. Obviously there is no local CHP plant or even a small chip-fired heating plant.

continued page 38
supplying the local high school or hospital. So there is no local syndicate of small-scale heat entrepreneurs looking for a source of supply.

To my knowledge, within Australia there is only one of this sort of thinning harvester (a Rotne H8 in SE Qld), and possibly up to 10 forwarder trailers, plus at least one thinning harvester built up on a tractor using a light slewing forestry crane and small head. Nor is there any government farm forestry extension service worth the name. As a farm forester I am effectively alone, and my commercial options are very limited.

The organisations that could have provided support and help for us in this position were the private forestry development committees and the Joint Venture Agroforestry Program – both now deceased. The farm forestry networks, the beleaguered and under-funded state or national forestry organisations, and the tiny and underfunded networks and cooperatives, and other semi-commercial non-industrial private forestry bodies, are unable to provide this sort of assistance. The farmers federation does not see farm forestry as being of any relevance or importance. Across the board the picture is one of short-sightedness, lack of perception and lack of policy direction. So is there a way out of this mess?

My chosen option is to get a contractor to bring in the smallest tracked harvester he has. This is a 15 tonne Finnish-made Lako with a Lako single grip harvester head. He recently used it to thin 10ha of blue gums, causing little damage to the 30% of retained trees. Cost was about $800/ha with the poles left in one row and the heads across two others. I used my 10 tonne Swedish Osa 250 forwarder to collect poles and forward out to an accessible fenceline (pictured above).

There they will sit until next autumn. This 10ha of 12yo blue gum has yielded about 40 green tonne of poles/ha with about 30 green tonne of heads left in the rows. Cost for the whole job is about $120/ha, and so the dry wood in stacked lengths has cost us about $50-60/dry tonne. The relatively high cost is due to the combination of small piece size, long forwarding distances, and thinning versus a clearfell.

In theory, using Scandinavian thinning machinery and accumulating heads and productivity rates, for thinning the figure could have been as low as $14

(11 Euros)/m³ or $30 (22 Euros) per dry tonne. For this Victorian site the actual cost has to be set against the potential return from second thinnings and final harvest for this site. It is unlikely that the end result of this thinning will be break-even.

In retrospect, the other option, of a clearfell of the site to begin a second rotation of pulp blue gum, looks quite good. Net return would have been $30/ green tonne (about $1,200/ha), with the cost of coppice management at $500/ha. Plantings of other timber species may come with more options. First thinnings of 7-8 year old sugar gum plantations in this area have been done at a cost-neutral arrangement. One example on a nearby 10ha site saw thinnings cut and removed as metre-long lengths for growing shiitake mushrooms on the cut logs.

Another nearby 10ha site was thinned to specifications, with stems removed as 4 foot lengths to fuel steam engines at Ballarat’s Sovereign Hill. These options will not be available to most farm foresters, and certainly are not available for larger volumes.

There is clearly an opening for contractors in the shrinking native forest industry to service farm forestry using imported thinning harvesters. Sampo sells good second hand factory serviced 1046 models, including harvesting head, for about 120,000 Euros. Check it out at www.sampo-rosenlew.fi

Costs are further discussed in the photo captions of the harvesting machinery.

Andrew Lang manages about 130ha of sawlog woodlots, which make up about 8% of the area of the Victorian Western District farm. The main species is sugar gum, with some blue gums, swamp yate and red ironbark. Rainfall is about 600mm and growth rates are about 7-9 MAL.
Checklist as to who and how to conduct harvesting

Harvesting and marketing timber can be very complex. The following points highlight stages, but are not limited to, a typical timber sale:

- Method of offering timber for sale;
- Method of selling timber;
- Negotiations with potential buyers to agreement on grades, quantities, prices and timing;
- Forest inspections, volume estimates, potential returns, Forest Practices issues, infrastructure and reforestation;
- Agreeing on sales terms, type of agreement and finalise (timber purchase agreement);
- Preparation of Forest Practices Plan;
- Arranging timber purchase agreement(s) and agreeing rates;
- Harvesting, deliveries and monitoring/supervision; and
- Reforestation.

If we are not entirely conversant with the processes and work involved with the sale of our timber, we should gain further advice from an impartial forest advisor and/or engage a qualified and experienced consulting forester, and consult with our financial and legal advisor.

The following checklist will help determine who and how the operations will be conducted:

- Do I have the experience, expertise and resources to harvest and market my timber?
- Do I fully understand the process of selling timber?
- Do I fully understand how to market timber?
- Do I know how much my timber is worth?
- Do I know who will buy my timber?
- Do I fully understand the forest practices issues of harvesting and marketing my timber?

If all the questions are answered with a “Yes” – there is the potential to harvest and market our timber ourselves.

If the majority of questions are answered with a ‘Yes’ – we should engage the relevant external expertise to fill the information gaps.

If the majority of questions are answered with a ‘No’ – we should engage a forest management company and gain further advice from an impartial forest advisor.

Cautionary case study

A landowner has correctly determined he did not have the experience, expertise and resources to harvest and market timber, so he sold the timber from his selective harvest of native forest to a local wood processing company. The company was entirely responsible for the harvesting, marketing, and forest practices and collated the necessary plans and timber purchase agreements.

After harvesting commenced, the landowner was concerned that what looked like high value power poles were being carted away with lower value pulpwood.

The plan and timber purchase agreement did not, however, contain prescriptions for a fully integrated product segregation.
Integrating sawlog and cattle production

BY MARK WRIGHT

Over the last decade, the Wright family siblings, James, Mark & Wendy, have aimed to integrate plantation sawlog and cattle production on their property in the Northern Rivers of NSW, as well as plant trees for environmental benefits.

The business, Super Forest Plantations, has over 1500ha of land of which 180ha is timber plantation with the remainder open grazing and native forest remnants. We aim to convert 50% of this area to mixed eucalypt plantation with integrated management of cattle.

The plantations have been established in stages, with the oldest stands now 10yo and undergoing their first commercial thinning operation, having been thinned to waste at age five from 1,250 to 800 stems/ha. Using manual directional felling, the plantation stocking is being reduced to 380st/ha. This process involves using our existing equipment, an 80hp tractor with 4 in 1 bucket to snig, debark, stack and load logs. The logs have been divided into two product streams, small poles and firewood.

The small poles 3-8m long with a large end diameter of 150-250mm are for above ground building use in sheds, carports and verandahs. Although the timber is durability class 1 we are not confident that the young plantation material is suitable for in ground use. We have some in ‘graveyard’ trials to test the poles in-ground durability. If successful, we could supply netting and trellising poles to fruit growers.

In the last year we have sold over $10,000 of poles for $11/lineal metre at the farm gate. This is a profitable activity and sales are improving. We aim to increase sales to $25-$30,000 per year.

Firewood default
Logs that are either too small or not straight enough to meet small pole specifications are cut into firewood. No splitting is required as the logs are a perfect size for fireplaces. The firewood business covers production costs, equipment and labour, but is not profitable beyond this. The firewood season in the sub tropics is short (three months) and the market is full of small to medium suppliers. We are unsure of the ability of this limited and competitive market to sustain another medium sized operator. This has made us reticent to invest in expensive and more efficient firewood production technology that would make it more profitable.

We have learnt from this initial harvest that it is difficult, but possible, to make money out of early plantation thinnings. Firewood production helps to cover the high cost of thinning, and although small pole production can be profitable, it is difficult to move all product produced. Harvest efficiency could be improved by upgrading our machinery with forks and log grab for the

Reassessing plantation design

The harvesting experience has caused us to reassess some of our plantation design and management strategies. The original plantation design has proven very problematic for our harvesting operations. High stocking rates planted along contours have made it difficult to fall trees without damaging trees in the rows below and to snig logs out around retained stems. Thinning large numbers of trees to waste is a costly and, we feel, largely unnecessary exercise.

As a result, we have radically changed our plantation design and management. Initial stocking has been reduced to 833st/ha at a 6 X 2m spacing with a pre-commercial thin to 400st/ha at age five and a commercial thin to 250st/ha at age 15.

Row orientation is up and down the slope, not on the contour, to allow for easier felling and snigging; that is, by dropping
to maximise value to the landowner. It only included specifications for generic pulpwood and sawlogs. The landowner had assumed that product values would be maximised and had been swayed by an apparently attractive pulpwood price. The company had not done anything incorrectly. The landowner had not gained advice from an impartial forest advisor, who probably would have advised that a fully integrated product segregation would have maximised returns.

Rob Smith, Private Forest Advisor, Private Forests Tasmania.

Mark Wright has been interested in trees & forest ecosystems all his life. He has been involved in the commercial growing of timber trees since 1999, planning & establishing mixed eucalypt plantations while completing a forestry degree at Southern Cross University in 2006.
More than one million poles stand across Ergon Energy’s vast network, supporting the powerlines that carry electricity to 97 per cent of Queensland. This year, the government-owned corporation will need approximately 12,000 new poles to maintain and expand its infrastructure. By 2030, annual demand is expected to more than double to 25,000 poles.

At the same time, logging of Queensland’s state forests – which supply 40 per cent of Ergon Energy’s poles – is being phased out. Since launching its Sustainable Pole Supply Project to secure the supply of poles into the future, Ergon Energy has acquired almost 6,000ha of land in south-east Queensland and northern New South Wales.

The properties have a diverse history, with regrowth of mixed age and stocking. Holdings range from cleared land with patchy regrowth, through to old forest with a high proportion of defective trees because of past selective logging.

Management prescriptions

With the support of Private Forestry Service Queensland (PFSQ), prescriptions for future management are being prepared for several areas which are predominantly spotted gum/ironbark (Corymbia citriodora/Eucalyptus crebra) forest.

Each property has been broken into coupes based on past land tenure or physical features, with each coupe stratified into management units based on stand condition.

The Gundiah hub, approximately 1600ha north-west of Gympie, is a good example of the diverse management required. Stand condition at this holding has been assessed using strip line surveys. Sampled trees were located using a Trimble Juno® GPS. Accurate data has been collected on:

- Species composition;
- Current stems/ha;
- Diameter at Breast Height Over Bark and product length;
- Potential current harvest, product range and volumes;
- Residual poles and other products/ha after treatment;
- Number of stems to be removed/ha in non-commercial thinning;
- Fire fuel loading/ha.

Following estimates of likely current yields and predictions of stand potential with appropriate silviculture, different strategies are applied to each management unit.

There is very good quality advanced regrowth in the areas that have been cleared in the past as well as in some of the more heavily harvested areas. It is these more disturbed areas that are the highest priority for management, as they will prove the most productive in the short term.

Past harvest operations tended to remove the better quality trees to leave poor quality, defective or non-commercial trees in the stand. This type of harvest operation has been undertaken over the hub area on at least three occasions, leaving a high proportion of non-productive trees. Heavy regeneration raises the stocking level and exacerbates the problem.

The first stage to resetting the productivity potential of this forest was a salvage harvest within most of the coupes. The harvest removed in priority order:

1. Poor standard trees that barely provided product, but were severely impacting productivity and the regeneration capability of the forest;
2. Any product that had reached its optimum value, and
3. Any poles that had reached their optimum strength rating, particularly in the gum topped, box dominated forest.

Four years ago Ergon Energy launched an ambitious project to grow the power poles of the future. The initiative is designed to address the combined challenges of increasing demand for hardwood poles and the looming loss of a traditional supply-base. Now more than halfway to its goal of acquiring 10,000 hectares under management, the regional Queensland electricity distributor has conducted its first salvage harvest, and is implementing management plans to increase future yield.
There are a diverse range of processors within a short distance of Gundiah. The Endeavour Foundation’s recently opened sawmill in Maryborough provides a good outlet for small logs. Pole treatment plants are located at Tiaro and Takura and there are a number of larger established sawmills within 100km. There is also a market for veneer logs in Brisbane, and the market for hardwood girders is strong following extensive damage to road and rail infrastructure in the 2011 floods.

The first salvage harvest was recently completed at Gundiah over an area of approximately 80ha, yielding a mix of poles, girders, piles and sawlogs of various grades.

The method of sale was for the logging contractor, Owen Thompson, to present a parcel for inspection by potential buyers. The sale process was facilitated by Sean Ryan of PFSQ on behalf of Ergon Energy.

Given the range of products and grades from the harvest, there was a need to consider which combination of offered prices would give the best return. The contractor’s knowledge of utilisation standards and presentation was also critical to the success of the operation.

Harvesting operations will resume this winter when ground conditions become dry again. Top disposal burning and a non-commercial thinning operation will also be conducted to ensure that the retained regrowth has optimum growing conditions.

David Wood is Manager, Vegetation and Sustainable Pole Forest, with regional Queensland electricity distributor Ergon Energy. He is a Registered Practising Forester, with recognised skills in Utility Corridor Management. He has almost 40 years experience in forestry management in Australia and Vanuatu.
**GREEN TRIANGLE**

### New markets for timber products need to be found

**BY MICHAEL CORNISH**

Our forestry harvesting has generally been a positive experience for us, but in recent times since the GFC, the proposed forward sale of Forestry SA’s trees and Gunn’s internal turmoil, it has been hard to get harvesting done.

BOOLARA is a mixed farm near Penola in the S.E. of South Australia. We farm forestry, cattle, sheep and grapes. The average rainfall is 650mm.

**Blue gums**

In 2011, we harvested 30.8ha of blue gums. These went about 16MAI, which has been our norm. Green Triangle Tree Farm project handled the harvesting operation. The partners in the project are Forestry SA, Nippon Paper Resources Australia Pty Ltd, Mitsui Bussan Woodchip Oceania Pty Ltd and us as the grower. The harvesting operation was carried out by Clearwater Harvesting Contractors, who used excavator grip harvesters and then forwarded the logs to the break.

Overall the operation was carried out extremely well with most of the unusable wood being utilised. The highlight of this operation was how well the truck drivers rolled the road and did not stick in the ‘tram tracks.’ In 2012, we will harvest 25.8ha of blue gum with the Green Triangle Tree Farm project.

It is important to make weekly site visits with the supervisor. This ensures that the operators are utilising the trees to the maximum benefit. Also ensure you have and give all contact details to and from contractors and supervisors, such as phone numbers, emails and UHF channels.

**Pines**

We have a Private Woodlot Agreement with Forestry SA. This is a long term (25yr) purchasing arrangement by which the corporation may select timber from us on a non-exclusive basis. When we thought that a thinning operation should take place, we would contact Forestry SA harvesting supervisors and we would plan when it was most beneficial to thin (T) the forest and to provide maximum product returns. In some cases, for example T2s, have been delayed to cut a high percentage of sawlogs or T1s have been brought forward to space trees out during a run of dry years.

The previous pine operation in 2008-09 financial year was a T5 in 34.1ha of a 1975 planting. This was a split clearfall. Then we did a T3 on a 1986 planting of 17.8ha; T3 on a 1987 planting of 16.3ha; T3 on 1988 planting of 20.8ha. Yields were 100cm³/ha for the T5 and about 80m³/ha for the T3. Forestry SA supervised the operation and we were paid for the harvesting on a royalty basis, minus the supervisor fee, marketing fee and other training levys.

Now, the markets for our timber products are disappearing. For our 38+ year old peeler logs, we were aiming for the Nangwarry Mill, but that’s gone. And Kimberley Clark Australia has closed its pulp mill at Snuggery, so there’s no local pulp market, except export chip through Portland.

Basically, with the pine we are looking at structural timber plus a little preservation and a rotation length of 32 years. The sweet spot is for logs 250-450mm diameter. Some of our trees are already 550mm in diameter and we may get penalised for oversize.

Our responsibility is to make sure the harvesting operation goes well and gravel the roads at least two years in advance so that...
the gravel has plenty of time to settle. We make all the roads B double compatible; if possible with 'loops' so no backing is required. Trimming of trees along roads is done by us prior to commencement of harvesting.

We issue the contractors with a log book sheet for every load that goes out and its destination, description and weight. Contractors are also asked to not put any rubbish in the forest, no shooting and not let anyone take firewood. If trees are marked to be harvested, we make sure they are taken. We try and do break trees at T3.

Regular visits from PIRSA Forestry were of great benefit with the discussions on all aspects of management. Due to government cutbacks, these people have all lost their jobs and now there is noone.

Forestry SA is not doing any external work, so we are talking to other companies to try and get the harvesting done.

High pruned cypress and firewood
Our high pruned C. maculata and cypress trees (8ha) have no market at this stage. A Lucas mill might be the solution with cut boards as the end product.

Red gum firewood sales have been fraught with non-payment issues.

In conclusion, we have a lot of thinning and clearfall operations that need to be carried out for the health of the forest and our bank balance. We are hoping that new markets will be found for pulp timber, for instance, a biomass plant.

Michael Cornish, owner manager, Boolara Proprietors, Penola SA.
Three methods for harvesting blue gum

BY STEPHEN MARTYN

WA Plantation Resources (WAPRES) commenced harvesting of blue gums in 1994 using the cut-to-length systems then operating in softwood plantations. The harvested volume has increased from ~40,000 tonnes/yr (1994) to 550,000-600,000 tonnes/yr, or approximately 2,500 tonnes/day. Subject to woodchip sales growth, we expect harvesting activity to increase up to 750,000 tonnes/yr.

WAPRES has a large and secure share of the woodfibre industry in Western Australia, exporting approximately 1 million tonnes of woodchips (including blue gum and native forest residues) to Japan annually and managing approximately 34,000ha of blue gum plantations across the Southwest and Great Southern regions of WA. A vertically integrated business, WAPRES has a significant involvement in all aspects of the industry, including nursery operations, plantation establishment, management, harvesting, processing and exporting. We have been exporting woodchips since 1976 and commenced hardwood plantation establishment in the 1980s. The export of plantation hardwood (E. globulus) woodchips from WA began in 1994.

WAPRES has three primary systems in place:
- **Cut-to-length (CTL)** – this approach uses a processor and forwarder combination. Trees are harvested and processed at stump, logs cut to between 5-6 metres for extraction by forwarder and then loaded to trailers;
- **Roadside** – using a feller bouncer and skidder combination, with processor at roadside. This is essentially a full tree harvesting system with the tree delimbed and debarked at roadside. Logs are docked to ~ 10 metre lengths and then loaded to trailers;
- **In field chipping (IFC)** – using a feller bouncer and skidder combination to extract full tree length for processing through a roadside based mobile debarking and chipping unit. We use an integrated system (Peterson Pacific DDC5000) however alternative options using separate flail & chipper units are available.

Our systems approach is influenced by a range of factors. First, and noting the relatively large volume involved, we primarily produce export woodchips through a single static facility based at Bunbury Port. This means we require a system capable of producing a high volume (tonnes/hr) of delimbed, debarked logs free of contaminants (soil, rock) and loaded roadside ready for haulage. The most cost effective and efficient harvesting system is a feller bouncer and skidder combination.

The most difficult and cost influencing aspect is the delimbing and debarking. Handling individual, small pieces can be time consuming and expensive. The key measure is tonnes/hour and roadside processing has proven to be a more effective processing option than stump processing and docking to shorter length.

**Grower requirement**

A second and key consideration is the grower requirement. Growers want to maximise their stumpage return and therefore minimise the harvesting costs. This means they want the most efficient harvesting system. They also want to have the residues (leaf and bark) retained on-site and (preferably) spread evenly across the plantation area between the stumps (and avoiding covering stumps and impeding coppice).
A previous school of thought was that CTL suited coppice (retention of residue at the stump), while roadside suited replanting (clean site). Growers, however, are now recognising that roadside systems that can ‘clean’ the area while producing the leaf/bark residue in a form that can be effectively spread back is of increasing interest. The developing view is that this may reduce harvesting costs, but retain the 2R silvicultural benefits.

We believe there is not one single approach that suits all plantations. We will continue to explore various combinations as we seek to better match the right system to the plantation.

CTL works best for smaller areas and high production stands. The roadside approach works well where we have large areas (hectares) and an opportunity to produce large daily volumes. As an example, a CTL crew (normally 2 processors and 1 forwarder) produce 250 tonnes/day. A roadside system (1 feller buncher, 2 skidders, 2-3 processors and load out machine) needs to produce >650 tonnes/day to generate the unit cost efficiencies required.

The IFC system is primarily used for poor form, low productivity areas. It efficiently deals with these plantations and optimises the grower stumpage return. As MAI increases, and log processing becomes more efficient then the pendulum swings back towards log processing in terms of optimising grower returns.

So our challenge is to continue to develop our harvesting system approach to first, reduce the unit cost by producing a high volume of logs per hour; and second, utilise all of the wood fibre and retain the bark/leaf residue in a form that can be easily spread back over the harvested area.

A secondary biomass market for crown wood (non specification chip wood) would be very valuable.

Stephen Martin, Harvesting Manager, WAPRES.
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