

Making Headlines:

Sandalwood Expands in the ARB

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AVONGRO

Wheatbelt Tree Cropping

Edition 2

Winter 2006

FOCUS ON A TREE FARMER

And not just any farmer, our very own Chairman Ian Hall.

Ian and Margaret Hall are part of a four-family enterprise farming 4,566 hectares east of Brookton. The farm consists of various grades of sand plain though to loams, heavy clay flats and floodplains. For the last 23 years the farm has been cropped, growing wheat, barley, lupins and canola with no livestock in the winter. Ian is a third generation farmer with a fourth generation joining the family business when their daughter and son-in-law return to the farm during 2006.

Over the years the land has been farmed in the traditional manner with the result that the lighter, sandier soils tended to blow as is often the case. In 2000, Ian heard Professor Syd Shea speak about the potential for pines on sands and the development of the industry. This was to be the inspiration that motivated Ian to investigate the integration of tree crops into their farming landscape. In 2001, the Hall Brothers planted 167 hectares to *Pinus pinaster* in a sharefarming arrangement with the Forest Products Commission (FPC). In subsequent years the Halls have planted 40 hectares of sandalwood, a 10 hectare *Pinus brutia* trial and 6,000 oil mallees. The Halls have also allocated large areas of land on their farm for the trialing of *Acacia saligna* and a variety of *Melaleuca* species including *Melaleuca uncinata*.

The driving force behind this move to tree cropping is to take land out of production which has proven unproductive for grain growing, and put it into something alternative that will not only be productive on that country, but will also hold the soil together and help to lower the ground water table. 'By having trees on this marginal land I am not tempted to try and put it to crop', said Ian, 'they physically stop me wasting money.'

Ian sees that tree crops will not only provide his family farming business with additional income streams while helping to improve the health of their remaining land, but will also provide local jobs and keep people in the district. 'Tree crops will provide employment in planning and planting, pruning and thinning, processing and marketing', said Ian, 'Ideally the tree crop industry needs to be self supporting, with short and medium term tree crops providing us with supplementary income and providing the funding to support longer term tree crop rotations on the farm.'

'We like to push the boundaries and find new ways of making money,' said Ian. 'Everything we do is with long term income in mind and tree crops are our superannuation.'

(Pictured Left: Ian Hall inspecting his maritime pine & sandalwood plantations)

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W E S T E R N A U S T R A L I A

A Word From the Chairman

My wife Margaret and I recently went over east to Grains Week and took the opportunity to visit Oberon, about three hours drive west of Sydney. Oberon is a typical town that services the farming industry. It's on the western side of the Blue Mountains in a 900mm rainfall zone. Since 1975 some land around Oberon has been planted to pines and there is now 85,000 hectares of pine forest estate.

Alan Wilson told us that plantation softwood forestry in Oberon has enabled the Oberon economy to grow by almost 30 per cent over the 1985-1993 period, well in excess of the NSW rate of about 12 per cent.

Alan's main word of advice was that it is very important to find a use for the waste products, as "the good stuff will take care of itself". Alan also feels that 105,000 hectares rather than 85,000 hectares would make the waste products and the industry as a whole even more viable.

The lessons for AVONGRO?

- *Work out rotations* In Oberon too much was planted in too short a time (15 years), and they now realise they should have staggered the plantings to mirror the harvest rotations.
- *Find a use for waste* Initially they had a lot of waste resource but no factory to process it.
- *Work with local authorities* The Shire is not working as well as it could with the forestry industry. Land right next door to the pulp mill is being subdivided into one acre blocks.

However, after spending three and a half hours looking and listening at what is happening in Oberon it became very clear to us that the triple bottom line truly works. The town is growing, not dying, and has a full range of services. Forestry employs 2,000 of the now 5,000 population and the environmental stability is clear to see.

Ian Hall
AVONGRO Chairman



Above & Below: Ian Hall inspecting his maritime pine plantation



WA Workshops - Cooperatives & Business Models for Emerging Industries

Later this year AVONGRO plans to bring Andrew Lang of SMARTtimbers in Victoria, and others with experience, to Western Australia to run a series of workshops on how cooperatives can help smaller producers create viable industries.

Andrew travelled through 12 countries around the world looking at timber-based cooperatives as part of a Churchill Fellowship in 2002. There are a range of models world-wide, and Andrew has studied them all. Whether you are producing timber or sandalwood nuts, firewood or biomass, oil or brushwood fencing, the principles from these models can be applied to your industry.

A cooperative brings together growers of smaller volumes of product. By working collaboratively smaller producers are able to consistently provide the volume of product necessary to make their industries competitive in the broader market place, and can pool resources (product, time, skills, infrastructure) to make their industry viable.

Register your general or specific interest with Monica (08 9291 8249 or mdurcan@iinet.net.au) to make sure you are notified of this important series. Even if your tree crop is only in its infancy, now is the time to start thinking about working together with others so you are ready when opportunities arise.

FloraSearch Begins to Flower

Four focus species well suited to WA wheatbelt areas at risk of salinisation and with encouraging long-term prospects have been identified by the FloraSearch project.

FloraSearch started coordinating efforts across southern Australia in 2002 to develop new woody crops for wide scale adoption in areas prone to salinisation. FloraSearch is following on from the Search research project (a WA based project, sponsored by the Natural Heritage Trust, that identified native woody species with the best indications of crop performance against tested product attributes) and is a joint national scale project between the CRC for Plant-based Management of Dryland Salinity (CRC Salinity) and the Joint Venture Agroforestry Program (JVAP).

More than 20,000 native plant species have been screened across southern Australia between the two projects. FloraSearch aims to increase this number when it completes current work in south-eastern Australia.

The four species will be no strangers to land managers, and contain a good spread of characteristics and industries that should provide flexibility for growers:

Acacia saligna Well known to WA farmers this salt-tolerant browse shrub is also widely used internationally. Its fodder value could be much improved by selection and it has shown good properties for wood products such as panel board. It is a very versatile, quick growing species.

***Eucalyptus rudis* (flooded gum)** Both Flooded gum and smooth-barked York gum were shown to have unusually low density wood for eucalypts. This increases their potential for manufacture of panel board products. Flooded gum suffers bad insect damage in native stands but there appears to be good natural variation and opportunity to select resistant lines. It will prefer low moist sites in the wetter western wheatbelt.

***Eucalyptus loxophleba subspecies lissophloia* (smooth-barked york gum)** Smooth-barked York gum is already being developed as an oil mallee but its more versatile wood increases its attraction. Like Flooded Gum it has unusually low density wood and this increases its potential for manufacture of panel board products.

***Atriplex nummularia* (old man saltbush)** Old man saltbush is a very variable species across southern Australia that can provide good grazing while reducing water tables. It is the best adapted saltbush for use on non-saline land, and has good potential to improve digestibility for stock through selection.

For FloraSearch the next step is to begin plant improvement for the selected species, including better understanding of agronomy and productivity. Some 100 ha of trials for old man saltbush and *Acacia saligna* are planned for winter 2006.



Above & Below:
Acacia saligna trial plot 52 months after planting
at Gibson, Western Australia



FLORASEARCH PROJECT

For more information on this project
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Sandalwood Expands



Above: ASN field day inspecting 50 hectare plantation east Beverley

Below: Konnongorring farmer Nathan Davey inspecting his young sandalwood plantation



Western Australian sandalwood has the potential to become an important tree crop in the Avon River Basin. There are over 2000 hectares established to date, estimations of over 100 tonnes of sandalwood nuts per annum by 2009, established markets in place, an established oil processing facility in Albany, and a dedicated Sandalwood Network for Avon.

The History WA sandalwood (*Santalum spicatum*) has long been a valuable export commodity in the WA Wheatbelt. WA sandalwood was first exported from Western Australia in 1845 and for most of this industry's history the resource has been derived from natural stands of the species.

Between 1892 and 1901 more than 50,000 tonnes were exported from Western Australia with nearly all this wood derived from the Wheatbelt as agricultural country was opened up. Today's harvest from natural stands is about 2,000 tonnes per year.

Sandalwood is a small tree endemic to the WA Wheatbelt and the arid interior. Although sandalwood was once common in the Wheatbelt clearing for agriculture and over exploitation has resulted in the majority of current harvesting occurring in the rangelands.

Markets Western Australian sandalwood is presently exported to South-East Asia for the manufacture of incense or joss sticks. It is also exported to India for the production of oil, and new products are being developed by local WA companies such as New Mountain Sandalwood.

At Albany in Western Australia a private company, Mt Romance Australia, have established an essential oil facility that not only extracts sandalwood oil, but also uses the oil in a wide range of cosmetic and therapeutic products.

Development Over the past 5 years, a sandalwood plantation industry has begun to develop in the Avon River Basin, with approximately 2,000 hectares established in the region to date. The main players involved in sandalwood plantation establishment include several private investment companies, numerous wheatbelt landowners and the Forest Products Commission.

The developing Sandalwood industry offers opportunities for WA land managers to look beyond annual crops to systems that will provide both long term income and natural resource protection.

Avon Sandalwood Network Due to increasing interest by wheatbelt landowners in the developing sandalwood plantation industry, and a need for grower coordination and increased access to information on all aspects of this industry, a growers group was formed in 2003, known as the Avon Sandalwood Network Inc (ASN).

The ASN is a grower driven group with 107 members, predominantly wheatbelt landowners who are establishing sandalwood plantations in the Avon River Basin. (continued page 5 >)

Since its inception in 2003, the ASN has grown rapidly, fuelled by the need for increased information by landowners and investors. Valuable funding assistance has been provided by the Avon Catchment Council and the National Landcare Program to support the development of the ASN.

On the 30th March the ASN held their 6th workshop and field day in Beverley. 82 people attended the full day event, providing participants with the opportunity to network with other growers, researchers and industry people, keeping updated on developments in the WA sandalwood plantation industry.

Future opportunities It is clear that Western Australian sandalwood has the potential to become an important tree crop in the Avon River Basin. Being a native deep rooted perennial species, sandalwood plantations are contributing towards a range of natural resource management and sustainability issues, whilst generating increased economic activity, business growth and employment in regional areas.

One exciting and untapped aspect of the developing sandalwood plantation industry in the Wheatbelt is the potential products that may be derived from the sandalwood nut. Estimations indicate that by 2009 plantations in the Avon Basin may be producing over 100 tonnes of sandalwood nuts per annum.

WA Sandalwood produces a large nut – a true seed (kernel) enclosed by a woody endocarp. Although sandalwood is commercially grown for its heartwood over a twenty year rotation, there is renewed interest in developing sandalwood nut products and markets.

For further information on the ASN contact secretary Tim Emmott on (08) 9621 2400 or temmott@gawa.org.au.



Our website is thanks to the ACC, GAWA & NLP Tree Crops Project

Thank You

AVONGRO

Supporters & Partners:

www.fpc.wa.gov.au
www.greeningaustralia.org.au
www.avoncm.org.au
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www.calm.wa.gov.au

AVONGRO Membership

Membership to AVONGRO is open to anyone. Please support us by joining and encouraging others. Please refer to the enclosed lift out for more information.

Forest Products Commission Active in the ARB

By the end of the 2006 planting season over 535 hectares of *Pinus pinaster* and 322 hectares of Sandalwood will have been planted in sharefarming arrangements with land managers in the Avon.

This is part of the Forest Products Commission (FPC) Strategic Tree Farming Program, which is working with farmers and the Avon Catchment Council to increase the plantation estate in the Avon, while ensuring that every planting is achieving maximum NRM benefits.

With a new range of commercial packages recently released, which include the option of annuity payments, the beauty of sharefarming with FPC is the flexible packages that help to spread the risk. FPC also come to your property to advise on the best placement of your plantation, to organise site assessments and to discuss all the options with you.

FPC is looking for suitable land to plant 100 hectares of *Pinus pinaster* and 520 hectares of Sandalwood for the 2007 planting season. Payment options include a choice of an 'upfront' payment (payable in two installments of 50% over two years of the contract) or a series of annualized payments (or 'annuities') over a predetermined period.

In addition to the cash payments, landholders choosing the 'upfront' option can elect to receive either a 15% share of timber revenue or a 10% share in timber revenue and a 10% share in the carbon net revenue. Cropshare under the 'annuity' option is limited to a 2% share in timber revenue and a 10% share in carbon net revenue.

For more information ring the main office at Gnangara on 08 9302 7488.

Worth Dollars as Carbon Sinks?

In early February 2006 a short series of workshops and information sessions were held in Western Australia by the Australian Greenhouse Office. AVONGRO hosted a forum in Northam on Friday February 10th which was attended by sixty people. The event was sponsored by the Avon Catchment Council, Greening Australia WA, the Australian Greenhouse Office and the Department of Agriculture.

Revegetation projects could be worth money in the future simply for the carbon that is sequestered, or captured, in the vegetation itself.

Around Australia there is enormous interest in carbon sequestration using revegetation projects. There is the potential to use revegetation projects to trade in carbon, if not internationally (the Australian government must ratify the Kyoto Protocol for international trade to occur), then perhaps locally or nationally.

While the Australian government has not ratified the Kyoto Protocol, it is still using the rules and definitions agreed under the Protocol to monitor progress towards achieving our 108% target. This means that revegetation projects that are Kyoto Consistent* have the potential to qualify for carbon trading in the future. These can be either biodiversity plantings or commercial species, provided there is some guarantee of permanence.

Each State and Territory in Australia has its own carbon legislation in place and the Western Australian Government is said to have the best legislation of all of them. We have had a Carbon Rights Act since 2003 (<http://www.dli.wa.gov.au/corporate.nsf/web/Carbon+Rights,+Carbon+Covenants+and+Tree+Plantations>).

This enables the rights to the carbon to be separated from the land the trees are growing on. By entering this onto the title of the property it allows the carbon in the trees to be bought and sold separately from the land. The first signing over of this type of carbon rights was initiated by the Oil Mallee Company of Australia in Koorda in November 2005.

So when planning your next revegetation project, make it Kyoto Consistent* . . . just in case.

*Kyoto Consistent

In Australia, a forest carbon sink must meet all of the following criteria:

- Comprise trees with a potential height of at least two metres and a crown cover of at least 20%;
- Cover an area greater than 0.2 hectares, and a minimum width of 10 metres;
- Have been established since 1 January 1990, on land that was clear of forest at 31 December 1989;
- Be established by direct human induced methods, such as planting, direct seeding, or the promotion of natural seed sources;

These criteria are consistent with those developed internationally under the Kyoto Protocol.

For more information:
www.greenhouse.gov.au

Energy From Wood

Rising oil prices are causing countries around the world to look seriously and urgently at alternative ways of producing energy, and woody biomass is being heralded as one of the important alternative crops.

As we know, the burning of fossil fuels is a major contributor to climate change. We use fossil fuels to grow our crops, run our vehicles, create electricity and generally to keep the wheels of commerce turning. Unmoved by the threats of climate change, it seems that rising prices will again be the catalyst for change.

Woody biomass is being heralded as one of the important crops that can produce energy for our energy hungry world. The latest and very exciting new product being developed is bio oil (different from and not to be confused with bio diesel).

Bio oil burns relatively clean, with low sulfur oxide and nitrogen oxide emissions and with the added benefit of being almost greenhouse neutral (the CO₂ released during burning is recaptured by continued growth of the plantation trees used as fuel).

Bio oil is produced from biomass, which includes biomass from woody perennials that we can grow in our broadacre Western Australian landscapes. Biomass is converted into bio oil through a process called pyrolysis. The biomass is finely ground and heated at 400 to 500oC, without oxygen. In only two seconds, approximately 70 percent of the material vaporises and is condensed into bio oil - a dark liquid that contains more than one hundred organic compounds.

Bio oils are low in viscosity and have been successfully burned in boilers, kilns and turbines. In Italy, trials are already underway to use bio-oil in diesel engines.

In the future, bio oil might be used for electrical generation or in locomotives or ships. Upgrading of the bio oil to a transportation fuel is technically feasible, with tests already under way in Germany.

The production of bio oil is beginning to be commercialised in North America. A company in Canada is building plants that will eventually process 200 tonnes of wood waste (dry basis) per day, and a new business in Alabama is developing a smaller bio oil reactor that can be transported on a flat-bed truck to service smaller biomass sites.

Who knows what the future might hold for tree cropping in the Avon. Imagine exporting tankers of bio oil from the Avon to help fuel the world, and all from trees that are addressing salinity and our other environmental challenges!



Planting sandalwood nuts in a young plantation, east Koorda



WA CARBON TRADING LEGISLATION

The WA Greenhouse Unit, (Department of the Premier & Cabinet) are working towards carbon sink trading legislation for Western Australia.

For more information contact the Greenhouse Unit on 9222 9888 or visit www.greenhouse.wa.gov.au.

Upcoming Events

WESTERN AUSTRALIA

9th June Arbor Day

29th to 31st August Dowerin Field Days

September 2006 Avon Sandalwood Network spring field day and workshop, contact Tim Emmott on 9621 2400 or temmott@gawa.org.au

30th September to 7th October Conservation and Landcare Exhibit, Perth Royal Show

Dates TBA Cooperatives and Business Models – read more about this workshop series in this newsletter and register your interest with Monica Durcan on 08 9291 8249.

Dates TBA WA Agroforestry Working Group – open to anyone with an interest or involvement in farm forestry. Meetings held 3 to 4 times a year. If you would like to be kept informed of these meetings, register your interest with Monica Durcan on 08 9291 8249.

NATIONAL

22nd to 25th October Biennial, International Australian Forest Growers Conference: Sustainable Forestry – Everybody Benefits, Launceston, Tasmania www.conferenceplus.com.au/AFG

Early December National Bioenergy Conference to be held in WA, contact Monica Durcan for information on 08 9291 8249 or email mdurcan@iinet.net.au.

INTERNATIONAL

6th to 9th November Deserts and Desertification: Challenges and Opportunities, Sede Boqer Campus, Negev, Israel (Daily Themes include 'Opportunities for the Drylands' and 'Local Models for Sustainable Development in Drylands') www.desertopportunities.org/site

12th to 16th November Afforestation and Sustainable Forests as a Means to Combat Desertification, Jerusalem, Israel (Daily Themes include 'Forest Establishment in Arid Zones', 'Ecology of Dry Land Forests', 'Afforestation as a Dry Lands Alternative Livelihood') www.fcd.org.il



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