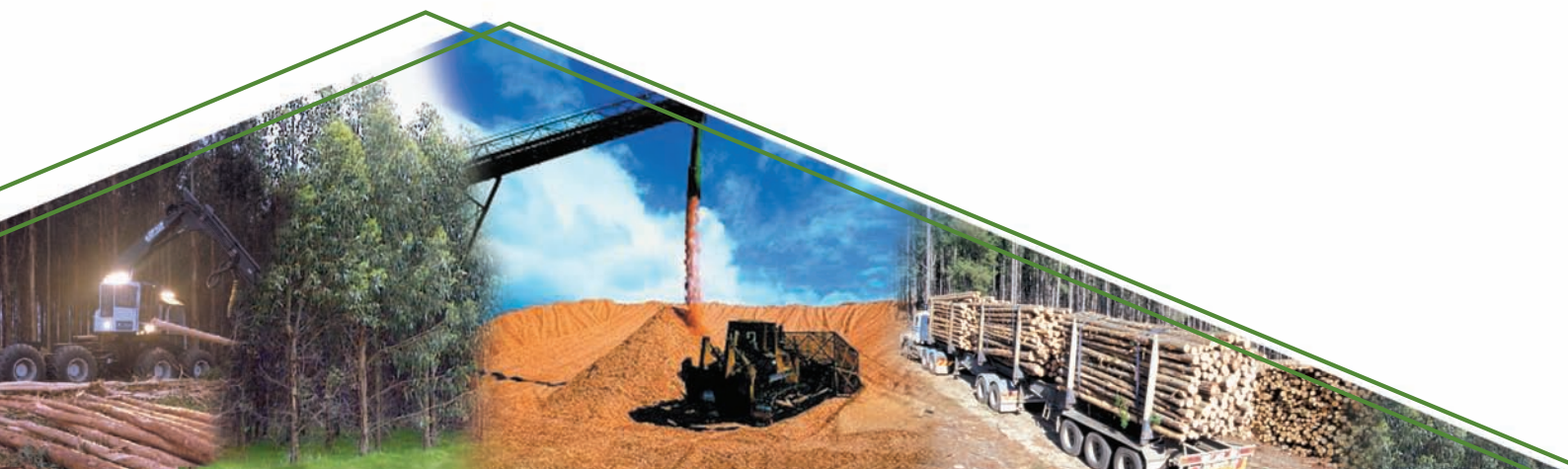


Future Wood Flows Across The Green Triangle Region Towards 2020...

Green Triangle Regional Plantation Committee



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Increased Production Equals Increased Needs

Forestry is one of the region's most important industries.

In the Green Triangle, the value of forestry exceeds \$1.2 Billion annually and in terms of regional gross domestic production, forestry adds \$778 million of value. Forestry is also a major employer with 8,700 people employed directly and indirectly. So forestry represents 16% of GDP and 12% of employment, off about 10% of the land.

Industry Perspective

Currently (2009), there is a total of 346,477 hectares of plantations in the Green Triangle Region, representing almost 20% of Australia's plantations.

The plantation resource consists of two components; Pine (*Pinus radiata*) and Blue Gum (*Eucalyptus globulus*).

A well established and mature Pine resource of almost 176,000 ha growing wood for a wide range of finished products - most of which are processed within the region and transported to local, state, national and international markets.

Since the mid 1990s, the Green Triangle Region has seen the rapid expansion of Blue Gum plantations, and latest regional inventory shows that there are approximately 171,000 ha of Blue Gum.

These plantations are being grown for export wood chips, mainly to Japan and China for the manufacture of pulp and paper products.

Geographic Information Systems (GIS)

Forestry has long utilised the power of Geographic Information Systems (GIS) to plan and manage plantations. A GIS is a powerful database that contains information about the age, area, quality, growth rate, harvesting history and future plans to allow growers to manage and plan the flow of wood from their plantation estates.

The South East Resources Information Centre (SERIC), based within the Limestone Coast Regional Development Board manages a series of GIS databases, including one for forestry. The SERIC database can generate all sorts of information for the region. For example, fire maps to assist in fire protection planning and also wood flow plans to indicate who, what where and when timber will be taken from the plantations to processing facilities within the region.

Analysis of the GIS indicates that the current annual Pine harvest of approximately 3-4 million tonnes will be sustained at this level into the future. It also indicates that

the Blue Gum harvest rapidly ramp up from 2010. Because establishment of the Blue Gum happen predominantly between 1998 and 2002, the harvesting will need to be spread over a number of years to smooth delivery to buyers. The long term annual average harvest will be about 3.8 million tonnes. This figure is similar to that released in 2005, despite an additional 40,000 ha of Blue Gum being planted. Part of the reason for a similar number is reduced growth due to drought, productivity being less than predicted and some fire losses. In terms of productivity, growers have agreed to assign four productivity zones across the region better reflecting realistic assessments of growth and some initial harvesting results.

Roads and Infrastructure

While the Pine estate is relatively concentrated and utilises an established transport network, the Blue Gum estate is more dispersed and will likely utilise other components of the transport network and affect other communities as the wood chips are transported towards Portland.

To better co-ordinate and understand the changing transport demands, growers, local government, regional development agencies and transport representatives meet regularly as the Green Triangle Timber Roads Committee to discuss transport needs and to determine funding priorities for the region.

A longer term vision for transport infrastructure has been developed in cooperation by the Victorian and South Australian Governments. A Freight Action Plan for the Green Triangle Region was released in April 2009. The plan outlines the needs and approaches to handle the increased tonnages coming on stream and includes alternative transport modes, changes to the current infrastructure, potential reinstatement and standardisation of the rail line from Heywood through Mt Gambier to Penola, where a potential bulk handling facility might be established, road upgrades etc.

How the Figures Were Obtained

The Green Triangle Regional Plantation Committee has coordinated the collection of data from plantation growers and SERIC has processed these data into maps indicating likely tonnages being transported to processing points throughout the region, based on existing road network. The plantation GIS has been subdivided into a number of productivity classes, and using productivity, plantation area and year of

planting and year of likely harvest; we have assumed a 12 year rotation for Blue Gum, the GIS can calculate the amount of wood being produced annually from the farm gate to the processing plant and also at any point in the transport network. Hence the system can predict when, where and how much wood will pass through any town in a given year and how much wood will ultimately arrive at the Port of Portland.

While there are many minor roads used, the principle roads are the Princes Highway from Millicent to Portland, the Riddoch Highway from Penola through Mt Gambier onto Nelson and then into Portland and the Casterton-Heywood and Casterton-Dartmoor Roads.

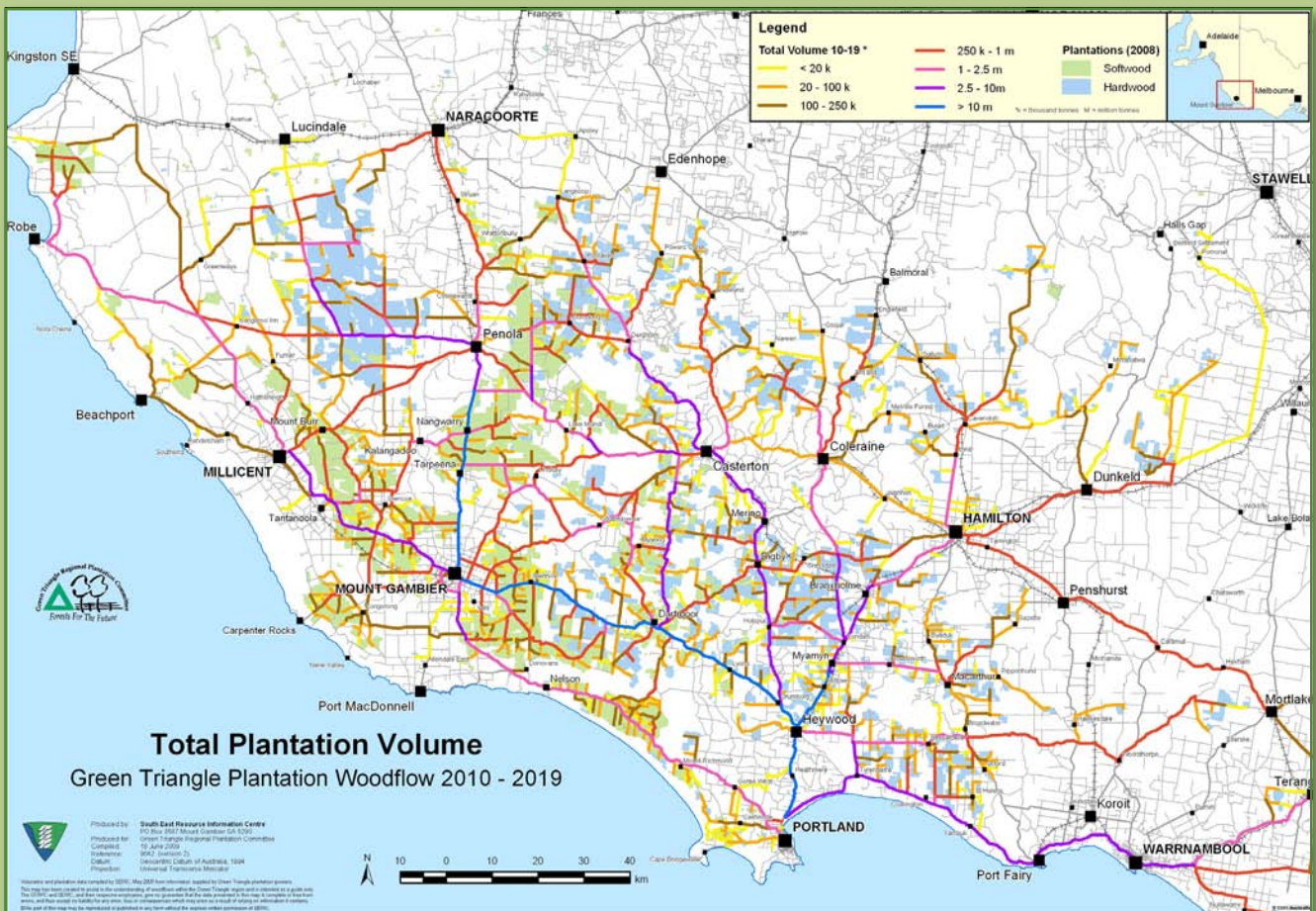
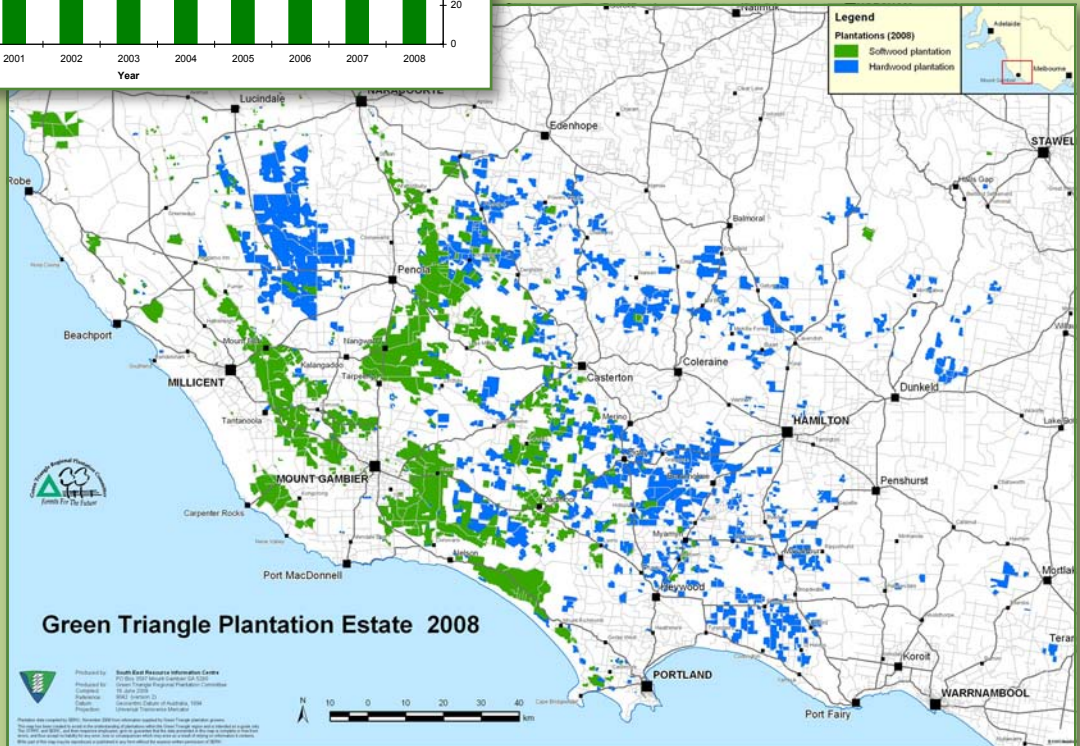
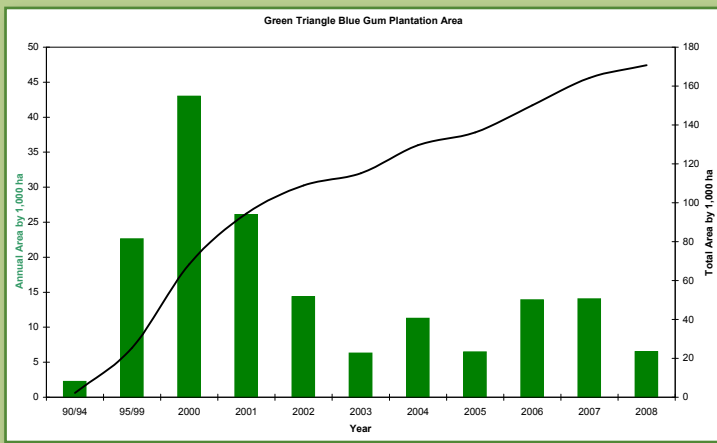
Results of Studies

With respect to the Blue Gum plantations, the long term 10 year average being harvested over the next decade will be approximately 3.8 million tonnes/yr, with the bulk of it likely going to the Port of Portland.

The data predicted that about 870,000 tonnes per year will pass in or around Penola, making a total wood movement of 2.5 Million tonnes per year coming into Mt Gambier along the Riddoch Highway. Other important points identified on the road network were Casterton and Heywood. Approximately 420,000 tonnes of Blue Gum will potentially pass through Casterton. This is less than earlier predictions as significant volumes can move along Chaffey Lane, west of Casterton, on to the Casterton-Dartmoor Road. These routes have seen significant funding investment since 2005.

Heywood is naturally a significant location as the bulk of the Blue Gum plantation estate is to the north and the town is at the confluence of several major roads heading to Portland. An estimated 3.1 Million tonnes of Blue Gum will pass through Heywood.

What does this mean in terms of truck movements? The enormity of the road transport undertaking can be appreciated from the estimates that for every 1 million tonnes of product passing a fixed point on the road network, there would be a truck carrying 25 tonne of wood chips entering or leaving the Port every 3.3 minutes based on a 12 hour day and a 7 day week. So if 3 million tonnes per year were to be exported, there would be a truck entering or leaving the Port every 66 seconds.



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Resources and production data compiled by SACI, May 2009 from information supplied by Green Triangle plantation growers.
 The 2008-09 woodflow data is based on the understanding of woodflow within the Green Triangle region and is intended as a guide only.
 Areas and their extent, including the approximate relationships between plantation and forestry, are shown in this map. Woodflow is shown in
 500 k m³ and is not intended to be a precise measure of woodflow. Woodflow is shown in 500 k m³ and is not intended to be a precise measure of woodflow.
 500 k m³ of this map may be reproduced in published or unpublished form without the express written permission of SACI.

“ A sustainable forestry sector providing long-term economic, environmental and social benefits to the Green Triangle region. ”

Alternative Modes

The GIS system used by SERIC also has the capacity to integrate other transport activity, e.g. movement of processed forest products and other sectors including dairying, grain, livestock, mineral sands etc. to develop a total transport perspective for the region and to predict the effects of introducing new transport systems such as the standardisation of the rail link between Heywood and Penola, or bypasses etc.

New Value adding and industry

Ideally onshore value adding would reduce Australia's reliance on pulp and paper imports. Planning approvals have been legislated for the construction of thermo-chemical-mechanical pulp mill based near Penola in South Australia. The promoters, Protavia, continue to seek finance.

Plantation Energy, is currently planning for two wood pelleting plants in the Green Triangle Region, one for Heywood and another at Wandilo, near Mount Gambier. While not being a big user of wood chips, wood pellets are used extensively for domestic use and as a partial substitute for fossil fuels in energy production in Europe. To this end Plantation Energy has entered a contract to supply wood pellets to Belgium-based power company Electrabel NV for output from Plantation Energy's Albany mill. This deal is potentially worth \$70 million over three years.

There will be scope for exporting of pellets and for domestic use too.

South West Fibre, a partnership between Midway Pty Ltd and Mitsui, have constructed a \$30 million wood chip mill at Myamyn, between Heywood and Hamilton. This mill will have an input capacity in of approximately 1.3 million tonnes of Blue Gum logs. A wood chip mill offers production costs about one quarter that for in-field chipping, produces a better quality chip, but utilizes 10-15% less wood chip compared to in-field operations as the head or part of trees are difficult to transport.

Conclusion

The information gathered in this study provides the region and its planners and managers with tools to assist planning for future transport requirements. The information is in a form that allows analysis of various transport scenarios for timber and SERIC is able to include other industries so that planners can better understand the total transport requirements for the region.

The transport of timber will clearly have a significant effect on infrastructure, other traffic, and communities adjacent to the principle roads. While there are numerous positive effects arising from the increased wood flows, transport issues require careful thought and strategic planning to optimise the community benefits of a new commercial resource.

The future for the Green Triangle, and particularly the forest industry, is very positive and will see the region develop further providing opportunities for the growth in value adding industries, employment and population.

About the Green Triangle Regional Plantation Committee

The Green Triangle Regional Plantation Committee has brought together a range of stakeholders and interested parties (growers, processors, State and Local Government, natural resource managers, farm foresters, consultants) in the plantation sector from across the region, to work on issues addressing planning, infrastructure, education, training and promotion of forest-based industries and associated enterprises. The Committee operated between 1997 and 2009.

The RPC vision supports and encourages 'A sustainable forestry sector providing long-term economic, environmental and social benefits to the Green Triangle region'.

Post Script

- For this publication, it has been assumed one cubic metre (green volume) is equivalent to one metric tonne; this relationship may vary with location, growth rate, season harvested, etc.
- It has been assumed that all Blue Gum wood chip is directly destined to the Port of Portland. As of June 2009, the Port did not have the infrastructure (storage, handling, loading) to accommodate the expected additional tonnages and as a minimum, the essential infrastructure would not be in place for at least one or more years if and when finance has been confirmed. Thus, in general, the bulk of the harvesting would be delayed until the Port has the relevant capacity in place.
- In July 2009, South West Fibre Pty. Ltd. will have commissioned a 1.3 million tonne capacity static wood chip mill at Myamyn. South West Fibre export their production through existing capacity at the Port and so are unaffected by Port infrastructure.
- The source of wood for the Myamyn facility has yet to be fully identified, but the bulk of any resource would likely travel along the Condah Hotspur Upper Road to access the mill. Thus the data presented do not properly reflect potential future tonnages on that road.
- Currently 1.2 million tonnes of pine wood chip is delivered to the Port of Portland, half comes from in-field chipping operations and half from sawmill residue.

