

» SOCIOECONOMIC IMPACTS OF

PLANTATION FORESTRY IN THE GREAT SOUTHERN REGION (WA)



Australian Government

Forest and Wood Products
Research and Development
Corporation

Bureau of Rural Sciences

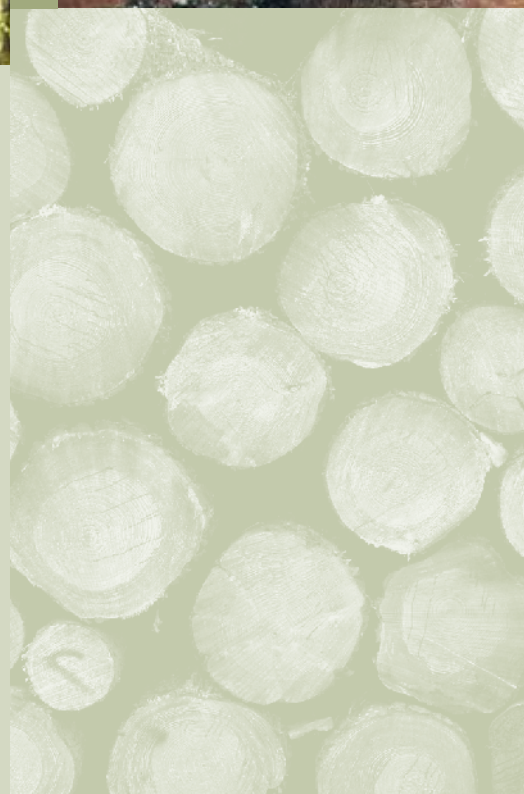


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INTRODUCTION

This information booklet summarises the key findings of a recent study conducted by the Bureau of Rural Sciences, examining socioeconomic impacts of plantation expansion in the Great Southern region of Western Australia between 1991 and 2004. The study was funded by the Forest and Wood Products Research and Development Corporation.

The study identified key land uses and industries in the region, and the history of plantation industry development. The level, type and location of employment and spending by the plantation sector over time were examined. The study then identified links between plantation sector expansion and changes in the socioeconomic characteristics of the population of different parts of the region.



» THE GREAT SOUTHERN REGION

The Great Southern region is a rural area in southern Western Australia. It has a single regional centre, the city of Albany with a population of almost 24,000 in 2001. The next largest town, Katanning, had a population of 3676 in 2001, and only three other towns — Denmark, Mt Barker and Kojonup — had populations of more than 1000. The majority of the rest of the population of 50,161 residents of the region in 2001 lived in small towns with a population of less than 1000 or on rural properties.

The expansion of the plantation industry was only one of the changes affecting the Great Southern region between 1991 and 2004.

The Great Southern experienced a range of socio-economic and land use changes between 1991 and 2004, only one of which was expansion of the plantation industry. Key changes affecting different parts of the region have included:

- a decline in the rural population of many parts of the region
- growth in the tourism industry, particularly in coastal areas, with the estimated value of domestic visitor expenditure valued at \$136 million in 2001 (DLGRD 2003)
- an expansion of plantations in the local government areas (LGAs) of Albany, Cranbrook and Plantagenet
- a rapid increase in the establishment of vineyards and wineries in Denmark and Plantagenet, with this sector employing up to 437 people in high season by 2001 (Farrelly 2001)

- a shift from sheep grazing to grain growing (in lower rainfall areas) or to beef cattle grazing (in higher rainfall areas)
- an increase in the numbers of people living on small rural residential blocks (often called 'lifestyle' blocks).

All these changes have had socioeconomic impacts on the region, which must be taken into account when considering the impacts of the plantation sector.

There has been an ongoing decline in the rural population of the region. Increased efficiency and a range of economic pressures have led to many farmers managing increasing areas of land to achieve a viable return from farming, often purchasing additional properties to achieve this.

While the dollar value of agricultural production has increased over time (Figure 1), agricultural employment has fallen (DLGRD 2003). Between 1996 and 2001, the number of farmers and farm managers in the Great Southern declined by 12.2%. This decline was higher on average in the three LGAs with high areas of plantation (16.1%) than in the remaining nine LGAs (9.1%).¹ However, three LGAs in which plantation establishment did not occur experienced decline as high as in one or more of the LGAs in which plantations expanded (Figure 2). This indicates that plantation expansion is only one factor among many influencing the rate of decline in numbers of farmers and farm managers in areas experiencing plantation expansion.

Figure 1 Value of agricultural production in the Great Southern, 1993 to 2000

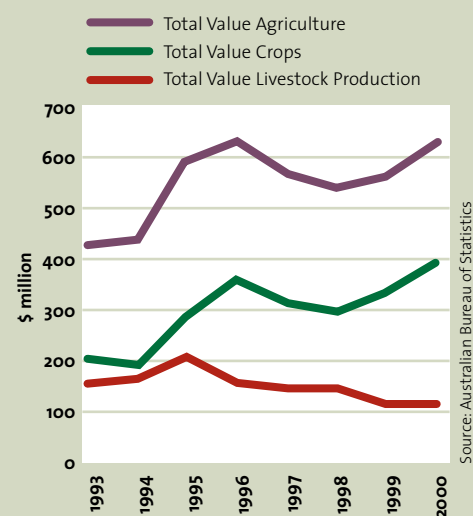
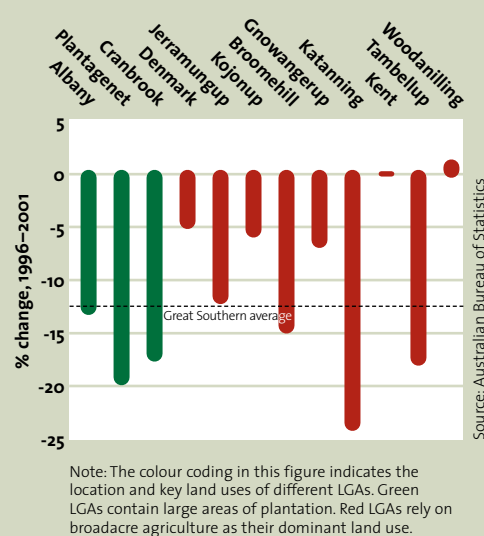


Figure 2 Change in number of farmers and farm managers, 1996 to 2001



¹ Plantation managers are not defined as 'farm managers', so this figure excludes the increase in the number of people managing plantations between 1996 and 2001.

» PLANTATION RESOURCES IN THE REGION

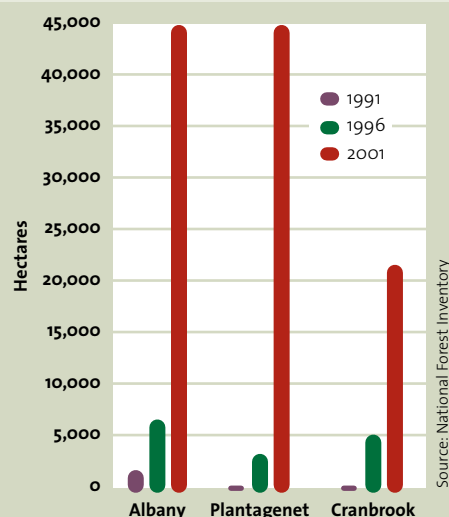
Most plantations in the Great Southern region have been established since 1991. By 2001, just over 119,000 hectares of *Eucalyptus globulus* (blue gum) plantation and a further 8455 hectares of softwood species (predominantly *Pinus pinaster* and *P. radiata*) had been planted, as well as some smaller areas of sandalwood and oil mallee.

Almost all of the 127,455 hectares of plantation in the Great Southern have been established since 1991, and 92.6% of the plantation estate is in just three local government areas — Albany, Cranbrook and Plantagenet.

Plantations have been established on land leased or bought from landholders by plantation companies. The large majority of the region's plantations (92.6%) are in three LGAs: Albany, Cranbrook and Plantagenet.²

By 2001, plantations had been established on an estimated 22% of agricultural land in Albany

Figure 3 Area of hardwood plantations 1991, 1996 and 2001



LGA, 10% in Cranbrook and 18% in Plantagenet, with considerably smaller areas in the LGAs of Denmark, Jerramungup and Kojonup. Oil mallee and sandalwood had been planted in several other parts of the region.

Harvesting of hardwood plantations began in 2001 and has since been expanding rapidly. A woodchip mill has been established in the region, while 'mobile chippers' are also used by some companies to process logs into woodchips at the harvest site. There are currently plans to establish a second woodchip mill, a biomass energy plant to process residues, and a composite wood products processing facility near Albany, the regional centre of the Great Southern.

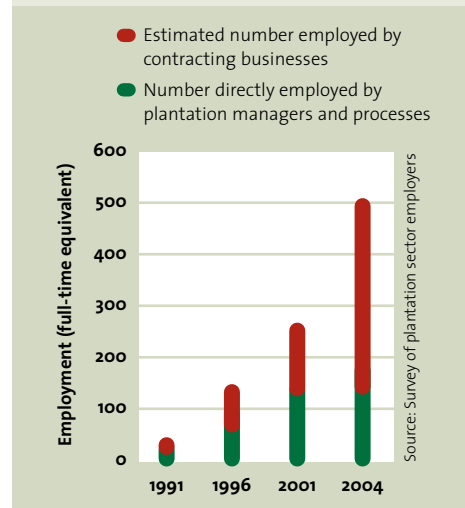
Employment in the plantation sector

Direct employment in the plantation sector grew from just 20 people in 1991 to 135 in 1996–97, 263 in 2001–02 and 500 in 2003–04 (Figure 4).

Direct employment in the plantation sector has increased particularly rapidly since 2001, when harvesting of plantations began in the region. Harvesting and processing activities have generated jobs in felling, processing of roundwood into woodchips, and transport of logs and woodchips.



Figure 4 Direct employment in the plantation sector, 1991 to 2004



² The spatial distribution of plantations in the region in September 2000 is shown on the back cover of this booklet.



Direct employment in the plantation sector grew from just 20 people in 1991–92 to 500 in 2003–04. By 2003–04, two-thirds of this direct employment was located within the Great Southern.

Much of the employment generated by plantation expansion is in contracting businesses. Contractors undertake tasks such as preparing sites for plantation establishment, planting seedlings, fertilising, and insect control. The number of jobs in the contracting sector has fluctuated considerably during some periods, largely due to variations in the area of new plantations being established each year.

In 1996–97, an estimated 57% of contracting businesses working in plantations in the Great Southern were based outside the region. By 2003–04, this had fallen to 36%, as local contracting businesses have established and expanded in the region to supply services to the growing plantation sector.

In 2003–04, 58% of employees working for plantation management companies or agencies were based in Albany, while 6% were based in other towns in the Great Southern (mostly Plantagenet and Cranbrook) and 36% were based outside the Great Southern.

As well as direct employment, the activities of the plantation sector generate 'flow-on' (or 'indirect') employment. This includes jobs such as those in local supermarkets generated as a result of plantation sector employees buying household groceries, or jobs generated by the production of goods purchased by plantation businesses.

For every \$1 million spent by the plantation sector, an estimated 17.15 jobs are created in the Great Southern. This includes both direct employment by the plantation industry, and flow-on employment generated as a result of demand for goods and services from the plantation industry. For every direct job in the plantation sector, this equates to flow-on employment of 0.65 people within the Great Southern. In addition, further flow-on employment is created outside the region when goods and services are imported from other regions.

Plantation sector expenditure

In 2001–02, expenditure by the plantation sector on plantations in the region totalled an estimated \$35.8 million. This included plantation management expenses, but not the costs of management of investment schemes or other business costs, such as servicing loans.

Plantation sector expenditure has increased rapidly since harvesting and processing began in the region, growing from an estimated \$35.8 million in 2001–02 to \$49.7 million in 2003–04.

By 2003–04, with harvesting and processing activities growing rapidly and a larger area of new plantations established than in 2001–02, the sector spent an estimated \$49.7 million. Of this:

- \$12.86 million was paid to contracting firms for such work as site preparation, planting of seedlings, firebreak maintenance or harvesting (64% was paid to businesses based in the region)
- \$36.7 million was spent on operating expenses such as wages, purchase of supplies and lease payments to landholders (67% was spent within the Great Southern).

Direct expenditure by the plantation sector generates flow-on expenditure. For example, suppliers of services to the sector buy goods and services in the region, and so on, creating a chain of flow-on economic activity. For every \$1 million spent by the plantation industry in the Great Southern, an estimated total of \$1.76 million is generated in regional output (in other words, in goods and services produced by a range of industries), and \$0.53 million of income is generated in the region. In addition, further flow-on activity is generated outside the Great Southern as some goods and services required by the plantation industry are purchased outside the region, and some income is similarly spent outside the region.



SOCIOECONOMIC CHANGE AND THE PLANTATION INDUSTRY

Population change

The study compared trends in town³ and rural⁴ population numbers in areas experiencing plantation expansion and in areas in which plantations have not been established on a large scale.

Plantation expansion has not been associated with increased rates of rural population decline at the LGA scale. The three LGAs that experienced the highest rate of plantation expansion over 1996 to 2001 experienced rural population growth or lower rates of decline than most other areas of the Great Southern.

LGAs in which plantations have been established have in general experienced either rural population growth or a lower rate of rural population decline than LGAs with high dependence on broadacre agriculture.

The latter, mostly inland LGAs, have mostly experienced high rates of rural population decline (Figure 5).

The difference in population change between plantation and non-plantation regions is probably largely related to factors other than plantation expansion.

Areas experiencing plantation expansion have often at the same time experienced growth in the numbers of residents living on 'lifestyle' rural residential blocks, as well as growth in population associated with the establishment of viticulture and other intensive

agriculture, such as olive growing. In addition, many houses on plantation properties have been rented out.

In contrast, there has generally been little increase in numbers of 'lifestyle' residents in areas not experiencing plantation expansion (with the exception of Denmark Shire), and less growth in intensive agriculture, so rural population has mostly fallen in those areas.

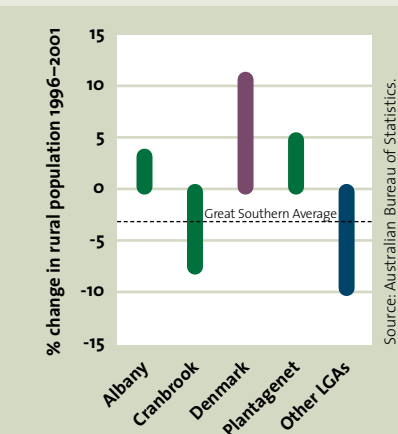
Expansion of plantations has been one of many factors contributing to population growth in the towns of Albany and Mt Barker, where most of those directly employed in the plantation sector live.

The study only examined population change at the LGA scale. It is possible that different trends have occurred at smaller scales than those observed when the town and rural population of an entire LGA was examined.

Provision of services in rural areas

In recent decades, many rural areas of Australia have experienced ongoing withdrawal of services such as banks, schools and health services. This has resulted from such factors as declining rural population, cost efficiency measures and changing mechanisms for service delivery.

Figure 5 Rural population change, 1996–2001



Note: The colour coding in this figure indicates the location and key land uses of different LGAs. Green LGAs contain large areas of plantation. Purple LGAs are on the coastline. Blue LGAs rely on broadacre agriculture as their dominant land use and have few or no plantations.



³ Defined as localities with 200 or more residents.

⁴ Defined as residents of localities with fewer than 200 residents, or those living outside gazetted town boundaries (eg. on rural properties).

Plantation expansion is more likely to be a response to rural decline than a cause of it. For example, in localities where large areas of plantations have been established, school enrolments tended to be declining at a higher than average rate before rapid plantation expansion occurred.

There were no observable differences between plantation and non-plantation LGAs in the rate of change in most service provision. For two types of services (education services and services to agricultural industries), service provision had declined more rapidly in areas of plantation expansion. However, this decline was generally already higher than the Great Southern average before plantation expansion occurred, indicating that plantation expansion was more likely to be a response to decline than one of its causes.

For example, school enrolments were compared in two types of small towns⁵ — those located near large areas of plantations⁶, and those with no nearby plantations.

Most small towns of both types experienced declines in school enrolments from 1991 to 2005 (Figure 6). Enrolments increased in only a small number of towns. Some schools closed in 'no plantation' areas, as did one in a 'high plantation' area.

The average change from 1991 to 2005 was a decline in enrolment of 34% for small towns near large plantation areas, and 17% for small towns not near plantations.

Although the average rate of decline was higher for towns very close to plantation estate, some schools not near plantations experienced a decline in enrolments as high as or higher than those in high plantation regions.

Furthermore, enrolments in schools close to plantations were found to have been declining more rapidly than the average before plantations were established in the area.

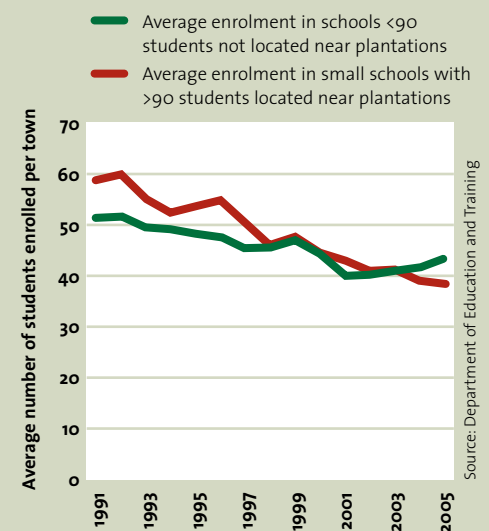
This indicates that factors other than plantation expansion are linked to declines in school enrolments in small towns, although further study over time should be undertaken to identify longer term trends.

Land prices

Plantation expansion has affected the rate of change in rural land values during years of high demand for land from the plantation sector.

During periods of rapid plantation expansion, values of land suited to tree growing have grown more rapidly than values of most other types of land in the Great Southern.

Figure 6 Average enrolments in towns with less than 90 students enrolled

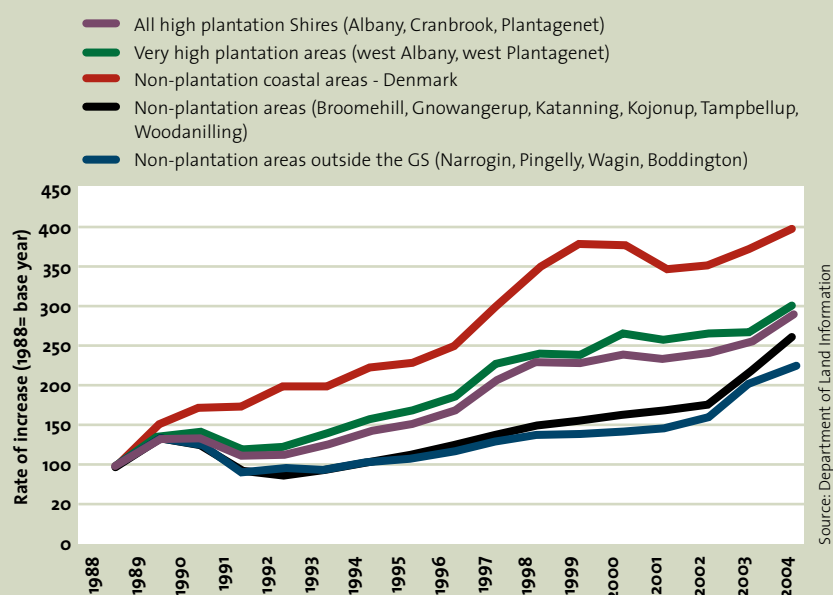


⁵ Defined as localities with less than 200 population.

⁶ A town was defined as 'near plantations' if a large area of plantation estate existed within 50 kilometres of the town. A town was defined as 'not near plantations' if the nearest large plantation estate was more than 100 km away.



Figure 7 Rate of increase in average land prices, for sales >40 ha, 1988-2004



In the Great Southern, plantations have been established on land that has been either leased or bought from landholders. Purchase of land by the plantation sector has the potential to directly influence land values. In the LGAs of Albany, Cranbrook and Plantagenet, between 10% and 70% of sales of land parcels larger than 40 hectares from 1994 to 2004 were to the plantation sector. The proportion of sales involving the sector fluctuated considerably over this time.

Land prices in areas suitable for plantations rose at a higher rate than land prices in other agricultural areas from the early 1990s onwards, particularly during periods of rapid plantation expansion from the mid-1990s to 2000 (Figure 7). Land prices in the coastal LGA of Denmark rose more rapidly than prices of land in areas where many plantations were established — a result of high demand for land for rural residential development and other purposes in Denmark Shire.

The leasing of land for plantations may have indirectly affected land values by limiting the area of land placed for sale on the market. This effect cannot be distinguished from the direct effect of land purchases for plantations with the data available.

In focus groups held for the study, some participants suggested that high demand for plantation land may influence values of nearby land that is not suitable for plantations. This was argued to result from a pattern in which farmers have sold land to plantation companies and then purchased properties in areas not suitable for plantations, increasing demand for (and hence the value of) land in these areas.

Land sales data are consistent with this theory. Land prices increased more rapidly in agricultural areas adjacent to areas with many plantations than in agricultural areas some distance away.

» KEY CHALLENGES FOR THE PLANTATION SECTOR

As plantations mature and harvesting expands in the Great Southern, some key challenges arise for the plantation sector.

Labour shortages

A rapidly increasing amount of labour is needed to manage and harvest plantations. Obtaining skilled employees to undertake this work can be difficult. Training initiatives are under way in the region to assist ongoing skills development.

Transportation infrastructure

Ongoing planning for transportation needs is essential as harvesting of plantations increases in the region. The Timber Industry Road Evaluation Strategy (TIRES) group, which includes representatives of local governments, the state government and the plantation sector, is working to address the transportation needs of the industry.

Attracting ongoing investment in processing

Investment in processing and export facilities is continuing in the region as the plantation sector expands. This investment is essential to maximise the socioeconomic benefits of the plantation sector, as much of the employment available from a mature plantation sector is generated by harvesting and processing.



Rural population change

Finally, in focus groups held during the study, participants from local government, rural communities and the plantation sector all suggested that plantation expansion could be better utilised to encourage rural population growth. The primary strategy suggested was to further encourage the use of houses on plantation properties. This could be through rental of houses, which already occurs, or through subdivisions of 'homestead blocks' on plantation properties. The latter course may encourage more long-term residents in rural areas.

Overall conclusions

Plantation expansion is a different type of land use change from that occurring in many rural regions of Australia. In areas where plantations are expanding, farmers often lease or sell their land to plantation companies, whereas in other areas they often lease or sell to other farmers.



While this involves a shift in land management, it has not been associated with higher than average rural population decline or service decline at the LGA level. In fact, some areas of the Great Southern in which plantations are expanding experienced rural population growth, particularly those that have also seen growth in rural residential developments and intensive agriculture.

This study examined the 'establishment' phase of plantation industry development in the Great Southern. The first harvesting of plantations in the region occurred towards the end of the period studied. Employment and spending associated with the plantation sector increased rapidly from the time harvesting began in the region.

Further studies should be undertaken to examine the socioeconomic impacts of the plantation industry as it matures and increasing volumes of wood are harvested and processed in the region.





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Further information

The information in this booklet has been drawn from the results of the FWPRDC Project No. PNo4.4007 report 'Socioeconomic impacts of plantation forestry in the Great Southern' report. Data analysis for the project was undertaken by the Bureau of Rural Sciences, with indirect economic impacts calculated using models provided by National Economics.

The full report can be downloaded from the websites of the Bureau of Rural Sciences (www.brs.gov.au) or the Forest and Wood Products Research and Development Corporation (www.fwprdc.org.au).

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