

» SOCIOECONOMIC IMPACTS OF

PLANTATION FORESTRY IN THE SOUTH WEST SLOPES REGION (NSW)



Australian Government

Forest and Wood Products
Research and Development
Corporation

Bureau of Rural Sciences



NOVEMBER 2005



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 South West Slopes of New South Wales between 1991 and 2004. The study was funded by the Forest and Wood Products Research and Development Corporation.

The study examined 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 identified. 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 SOUTH WEST SLOPES

The South West Slopes (SWS) is a rural region of New South Wales.¹ Agriculture is the dominant land use of many parts of the SWS, which also contains large areas of national park and plantation estate. A broad mix of industries operates in the region, particularly in the two regional cities of Albury and Wagga Wagga.

Local government areas (LGAs) of the SWS that remain highly dependent on agriculture include Culcairn, Gundagai, Holbrook and Tumbarumba. The plantation sector is most significant as a proportion of economic activity in the LGAs of Tumut, Tumbarumba, Holbrook and Hume, although the activity in Hume is effectively spread across Albury as well.

A number of changes occurred in the SWS over the past two decades, one of which was continued expansion of the plantation industry.



Key changes in land use in the SWS over the past two decades have included:

- a shift to off farm employment for many farming families
- rapidly expanding harvesting and processing activities in the plantation sector
- a shift from sheep grazing to either grain growing or cattle grazing

- establishment of vineyards and some other new enterprises
- increasing numbers of rural residential blocks (commonly called 'hobby farms') in some LGAs.

All these changes have had socioeconomic impacts that must be taken into account when considering the impacts of the plantation sector.

¹ A map of the region is provided on the back cover of this booklet.

» OVERVIEW OF THE PLANTATION INDUSTRY

A large-scale, mature plantation industry has developed in the South West Slopes since the 1920s, and continues to expand.

Softwood plantations, mainly of *Pinus radiata*, have been established in the SWS since the 1920s.

By 2004, the total area of plantation in the region was 110,000 hectares, of which 74% was publicly owned and 26% privately owned (Figure 1). A further 19,000 hectares of plantation are located in the Shelley region of Victoria and form part of the wood supply in the region.²

Most of the plantations are in the shires of Tumut, Tumbarumba and Holbrook, with a smaller area established in Gundagai Shire.

Since the 1950s, the volume of wood harvested from SWS plantations has grown steadily, as has the volume of wood processed in the region (Table 1). A number of processing facilities have been established in the region, and most have expanded their processing capacities over time.

Wood harvested in the SWS is processed in Tumut, Tumbarumba, Albury, Holbrook, Wagga Wagga, Myrtleford and Canberra.

URS Forestry (2004) provides a detailed overview of wood flows from plantations in the region. In recent years, more than \$700 million has been invested in establishing new processing facilities and expanding existing facilities in the region, with ongoing investment planned in coming years.

Employment in the plantation sector

Direct employment

In 2003–04, a total of 1680 full time jobs were generated in managing, harvesting and processing plantations in the SWS. This equated to an average of 1.53 full time equivalent employees per 100 hectares of plantation. This figure includes all employment up to the point at which processed timber products left mills for transport to markets, with 0.50 full time equivalent jobs in plantation management, harvesting and haulage, and 1.03 in processing.

In 2003–04, the management, harvesting and processing of SWS plantations directly generated 1680 jobs. An estimated further 3250 jobs were indirectly generated.

Changes in level of direct employment

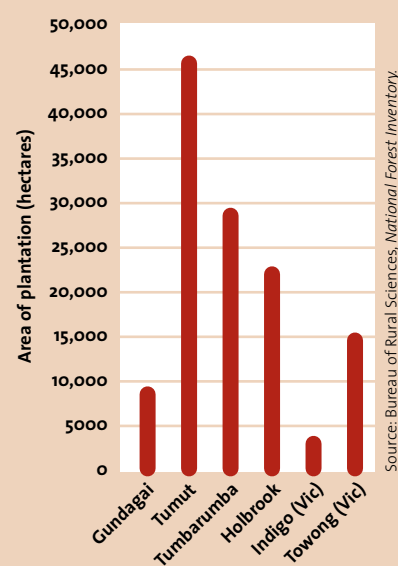
Since 1993, there has usually been less than a 5% fluctuation in the number of people employed in the plantation sector in any one year (Figure 2). This contrasts with the agricultural sector, in which fluctuations in climatic conditions can result in rapid changes in employment. For example, the 2002–03 drought led to an estimated 15% drop in agricultural employment across Australia (Productivity Commission 2005).

Table 1 Volume of timber transported in the SWS ('000 tonnes or cubic metres)

	1991	2001	2006 est.
Logs	1000	2050	2455
Wood products and residue	710	1612	1966
Total	1710	3662	4411

Note: Includes a small proportion of native forest timber
Source: PEECE Consulting (2005)

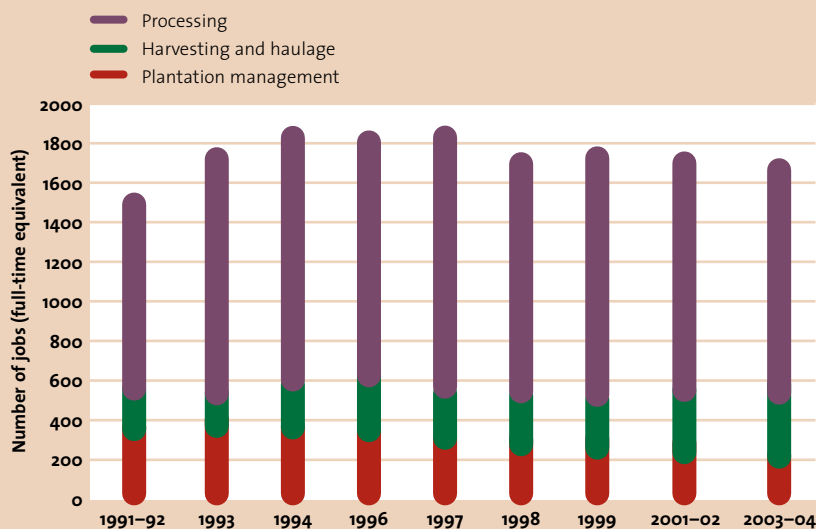
Figure 1 Area of softwood plantation in 2004



Note: Some LGAs in the region with small areas of plantation have been excluded from this figure.

² The spatial distribution of plantations in the region in 2001 is shown on the back cover of this booklet.

Figure 2 Direct employment generated by plantations in the SWS



Data source: (a) Forests NSW — Forest Industry Census (b) Direct survey of plantation sector employers undertaken for this project (c) Margules Groome Poyry Pty Ltd (1995)

Type of employment

Over 95% of direct employment in the plantation sector in 2003-04 (in growing, harvesting and haulage, and processing) was full time employment, while less than 5% was part time or casual. Part time and casual jobs are generally in areas such as the planting of seedlings and seasonal fire fighting.

Location of employment

The SWS captures a large part of the direct employment impacts from the sector. Between 92% and 94% of direct employment generated by SWS plantations from 1991-92 to 2003-04 was based within the region.



Plantation sector employment remained relatively steady even during periods of lower demand for wood products. This was a result of the maintenance of processing volumes through periods of lower demand (eg through stockpiling product) and increasing substitution of softwood for hardwood products in the construction sector, resulting in growing demand for softwood products even during periods of low demand for wood products generally.

The number of people employed has remained relatively steady from the mid 1990s, while the volume of timber harvested has risen rapidly. This was a result of increasing efficiency of production, with fewer people required to produce the same volume of wood products.

In the processing sector, the total level of employment has remained steady because decreases in employment at some facilities have been balanced by new employment generated through the establishment or expansion of other facilities.

In 2003-04, 66% of direct employment in plantation management and processing generated by SWS plantations was based in the towns of Tumut (over 900 jobs) and Tumbarumba (over 200 jobs).

More than 90% of direct employment generated by the management, harvesting and processing of SWS plantations is based in the region.

Indirect employment

For every \$1 million spent by the plantation sector, between 8.3 and 15.7 jobs are created in the SWS, depending on which part of the plantation industry is being examined. 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. In addition, further flow-on employment is created outside the region when goods and services are imported from other regions.

For every direct job in the plantation sector, this equates to flow-on employment equivalent to between 0.8 and 1.3 jobs within the SWS. For example, one job in the forestry and logging sector generated flow-on employment in the region equivalent to 0.8 of a full-time job. One job in the pulp, paper and paperboard sector generated flow-on employment of 1.3 jobs, which includes some employment in the forestry and logging sector.

Plantation sector output and expenditure

Value of output

The value of output from plantations in the SWS rose from \$401.4 million in 1993–94 to \$574.5 million in 2002–03 (measured in \$2002–03 at the point at which processed products leave mills to be transported to market). Table 2 shows the value of output at different stages.

This equated to an increase from \$4270 per hectare of plantation in 1993–94 to \$5334 per hectare in 2002–03.

The value of output produced per hectare of plantation rose from \$4270 in 1993–94 to \$5334 in 2002–03.

Location of expenditure

A large proportion of expenditure by the plantation sector occurs within the SWS. In particular, most expenditure on wages and salaries and on plantation management occurs within the region. The key exception to this is processing inputs: while most roundwood and fibre input to processors is sourced within the SWS, some key materials, such as chemicals used in processing, are commonly purchased outside the region.

Table 2 Value of output from plantations grown in the SWS, 1993–94 and 2002–03

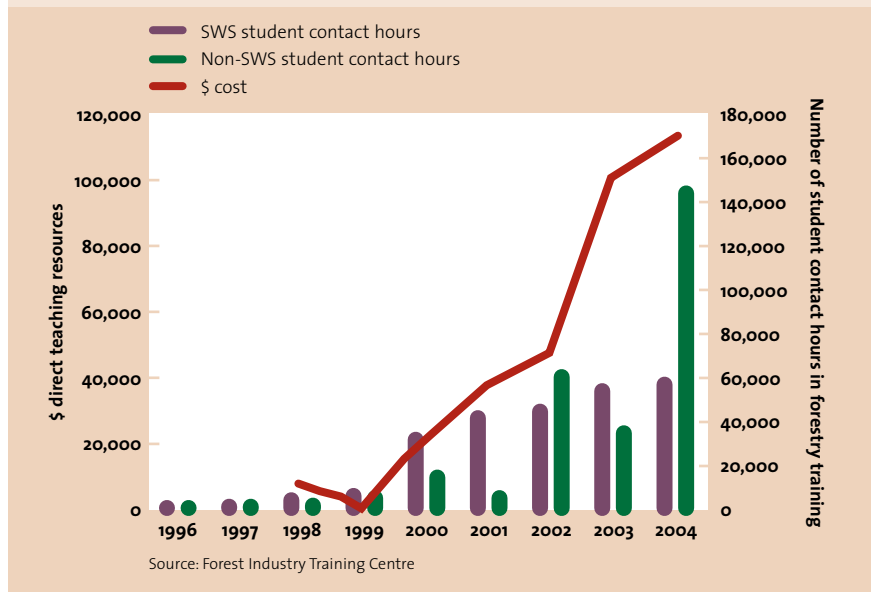
	1993–94 (\$ million)	2002–03 (\$ million)
Plantation management	28.3	45.7
Harvesting and haulage	21.6	32.1
Softwood processing	361.4	549.8
Total value of output (net)	401.4	574.5

Sources:
Margules Groome Poyry Pty Ltd (1995) — used for 1993–94 data
URS Forestry (2004) — used for 2002–03 data
Direct survey of plantation sector — used for both periods as appropriate to adjust data.





Figure 3 Training investment through the Forest Industry Training Centre



Indirect output

A total of \$1.63 to \$1.83 of output is generated in the SWS economy for every dollar invested by the plantation sector; and \$0.31 to \$0.49 income (eg wages and salaries paid to employees in the region). This represents the flow-on activity generated by the plantation sector in the regional economy, for example, through the purchase of supplies from regional businesses and plantation industry employees spending their income on goods and services in the region. Further flow-on activity is also generated outside the SWS, for example when goods and services are imported into the SWS.

Investment in training

Employees in the plantation sector require considerable skills to operate complex machinery and to ensure compliance with environmental standards during plantation management, harvesting and processing.

Considerable investment in training has occurred in the region since the mid 1990s through the Forest Industry Training Centre (Figure 3).



» SOCIOECONOMIC CHANGE AND THE PLANTATION INDUSTRY

Population change

In general, town populations in the SWS have followed trends common across Australia: the populations of the regional cities of Albury and Wagga Wagga have risen, while the populations of most smaller towns have fallen (Figure 4).

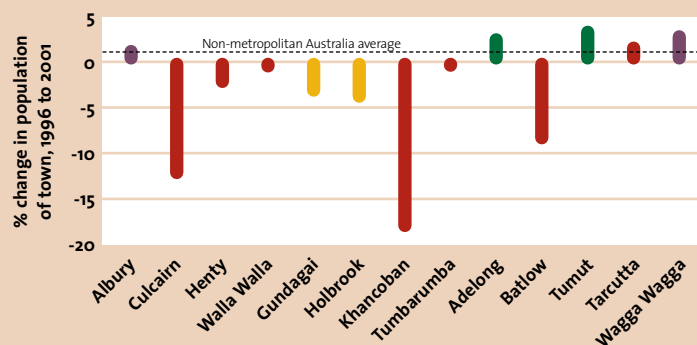
However, smaller towns with large-scale plantation processing facilities (Tumut, Adelong and Tumbarumba) were more likely to experience population growth or a stable population from 1996 to 2001.

The presence of the plantation industry in these towns provided a source of diversification for the local economy and reduced the towns' vulnerability to changes in the agricultural or other sectors.

In contrast, small towns in areas of the SWS with high dependence on agriculture mostly experienced population decline.

Holbrook, which has smaller scale plantation processing facilities than Tumut or Tumbarumba, experienced population decline. Holbrook's economy still depends mainly on agriculture, despite the existence of plantation processing in the LGA.

Figure 4 Total change in population of different towns in the South West Slopes, 1996 to 2001



Note: The colour coding in this figure indicates the location and key land uses of different LGAs. Yellow indicates towns near large areas of plantation estate, while green indicates towns near plantations that also contain processing facilities processing large volumes of plantation wood. Purple indicates towns not close to plantations but with plantation processing facilities. Red indicates towns with a high proportion of employment in the agricultural sector and little or no plantation sector activity.

Source: Australian Bureau of Statistics

Sociodemographic change

Age structure

In general, the population of the study region has aged, consistent with the overall ageing of the Australian population. However, SWS LGAs highly dependent on agriculture have tended to experience higher growth in retirement age population than in working age population. In contrast, LGAs with more diverse economies, including those with high plantation sector employment, have experienced greater increases in working age population, indicating that they have better prospects for long term economic growth and population stability than LGAs with higher economic dependence on traditional agriculture.

Small towns with high levels of plantation sector employment experienced higher overall population growth, stronger growth in working age population, and more consistent growth in household income over 1996 to 2001 than other small towns in the region.

Qualifications

The SWS population in general has become more highly qualified, with increases in the proportion holding a certificate, bachelor degree or higher qualification. Again, this is consistent with trends across Australia. LGAs with smaller populations generally experienced a slower growth in the proportion of the population holding qualifications beyond high school, although those with higher economic diversity tended to experience more rapid growth than those with high dependence on broadacre agriculture.



Length of residence

Most LGAs in the region experienced a decline in the proportion of population made up of recently arrived residents between 1996 and 2001, with the exception of the shires of Tumut and Holbrook. In both these LGAs, changes in wood processing (particularly the establishment of the Visy Industries pulp and paper mill in Tumut) probably contributed to an increase in the proportion of new residents; no other major changes identified by local residents are likely to have been associated with the shift.

Expansion of processing facilities led to higher numbers of new residents shifting to some parts of the region over the period from 1996 to 2001.

Unemployment

Unemployment fell in all LGAs in the region from 1991 to 2004, with most jobs growth coming from part time employment. This was consistent with broader national trends. The exception is the Shire of Tumut, where both full time and part time jobs have been created, possibly reflecting the high proportion of full time work available in the plantation sector.

Household income

Household income growth has generally been more reliable over time in LGAs with higher economic diversity. The plantation sector has been one of the sectors contributing to this diversity in LGAs where processing facilities have been established and plantation managers and employees are based.

Service provision

Limited data were available on changes occurring to service provision in the SWS. The data that were available indicated that changes in the level of education, health, government and retail services and community groups were generally influenced by a range of factors. Probably the greatest of these was overall population change.

Key trends in service provision included the following:

- School enrolments declined in most areas. This reflects the decline in the proportion of children in the population and low population growth in the region. The Shire of Tumut experienced less decline in enrolments than other LGAs.
- Membership of community groups and the number of community groups were greater in areas experiencing higher population growth. However, shift workers employed in processing facilities can find it difficult to attend meetings or sports games on a regular basis.
- The Shire of Tumut had somewhat stronger growth in the retail sector than other 'small population' LGAs of the SWS. This is likely a result both of the strong plantation processing sector in Tumut and of the general trend in which the town of Tumut has been acting as a small regional centre for surrounding areas.

In focus groups, many participants reported that Forest NSW's considerable investment in fire fighting services to protect the large plantation estate has provided important benefits in the region.

Other landholders have benefited from rapid response to fire incidents by Forests NSW, which reduces fire damage on both plantation land and other land in the SWS.

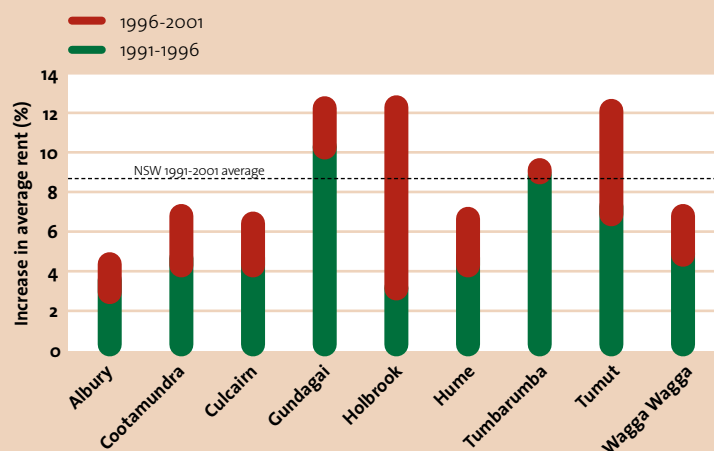
Residential property markets

Rental markets

In Tumut, rental vacancy rates have been low since the 1980s. Construction and expansion of plantation processing facilities has further constrained vacancy rates. During the construction of the Visy Industries pulp and paper mill from 1999 to 2001, it became extremely difficult to find housing to rent. In Tumbarumba, upgrading of the Hyne and Son sawmill over 2003 and 2004 resulted in a similar fall in rental vacancy rates. Because local accommodation is scarce, some workers have had to rent or purchase housing in towns some distance away and commute to the towns of Tumbarumba and Tumut.

Average rents rose more rapidly than the NSW average in Tumut, Tumbarumba, Gundagai and Holbrook from 1991 to 2001 (Figure 5). Some real estate agents observed rental prices increasing more rapidly in the town of Tumut in recent years, and believed that this was at least partly a result of increasing numbers of highly paid workers shifting into the region to work in the plantation sector.

Figure 5 Rate of increase in average rent paid across all types of dwelling, 1991 to 2001



Source: Australian Bureau of Statistics, *Census of Population and Housing*

Plantation sector expansion has further constrained availability of housing in areas with limited and/or poor quality housing stock.

Residential property values

Sales data show an overall trend of rising residential property prices in recent years. Local real estate agents believe the key factor causing these price rises has been increased demand from investors outside the region and rising residential property values nationwide. This trend has dominated overall price movements, generally masking other influences, such as any that may have resulted from expansion of the plantation sector.

Transportation

The amount of timber transported in the SWS has increased substantially since 1991 and is expected to increase further in coming years (Table 1).

Plantation sector transportation needs have the potential to place a significant burden on road networks in the region, some of which were originally designed and built to carry lower weights. The plantation industry and local and state governments have been working together on an ongoing basis to plan for funding required to maintain and upgrade roads in the region, and to prioritise transport infrastructure needs. This, together with ongoing discussion of alternative transportation options — such as a proposed re opening of the Tumut to Cootamundra railway line — is essential to meet the transport infrastructure needs of the expanding plantation sector.

» KEY CHALLENGES FOR THE PLANTATION SECTOR

As the plantation sector expands in the region, some key challenges arise.

Ongoing planning for future transportation needs is essential as increasing volumes of logs and processed wood products are transported within and outside the region.

It is also important to put in place strategies to manage temporary increases in population related to the establishment or expansion of processing facilities.

Obtaining skilled labour to work in the industry is a continuing challenge. Training of the existing labour force is an ongoing need. Considerable training resources have been established in the SWS to support the plantation sector. Basing resources in the region has allowed training of SWS residents, reducing the need to import skilled labour from outside the region. Continuing to invest in development of a highly skilled labour force is essential as the industry evolves and new technologies are used.

Overall conclusions

Expansion of the SWS plantation sector from 1991 to 2004 has contributed to stable economic growth in the region, and to stable or growing populations in some towns that otherwise would have been likely to experience population decline. Strong growth in working age population in towns with high plantation sector employment indicates high potential for ongoing stable or growing population and economic activity in these towns over time.

Although increasing mechanisation in the plantation sector has led to higher output per employee, the expansion in wood volumes processed has been rapid enough to keep employment needs steady.





Photo credits

Cover page, top left: ForestrySA
 Cover page, bottom left: Ian Frakes
 Page 2: FWPRDC file photo
 Page 4: Forests NSW
 Page 5: Mark Parsons
 Page 6 - top: Michael F. Ryan
 Page 6 - bottom left: Timber 2020 Inc
 Page 6 - bottom right: BRS file photo
 Page 8: Mark Parsons
 Page 10: University of Tasmania
 Page 11: Michael F. Ryan

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 South West Slopes of NSW' 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).

For further information, please contact:

Bureau of Rural Sciences

GPO Box 858

Canberra ACT 2601

Email socialsciences@brs.gov.au

Phone 02 6272 4282

Acknowledgments

We would like to thank all the members of the plantation industry, local government and regional communities who contributed their time and resources to the project. The project was funded by the Forest and Wood Products Research and Development Corporation, which is jointly funded by the Australian forest and wood products industry and the Australian Government.

References

Margules Groome Poyry Pty Ltd (1995). *The Economic Impact of the New South Wales Timber Industry*. December 1995, State Forests of New South Wales, Sydney.

PEECE Consulting (2005). *Regional Transport Plan for the Timber Industry in the South West Slopes of NSW*. Report prepared for the Softwoods Working Group.

Productivity Commission (2005). *Trends in Australian Agriculture*. Research paper, Canberra.

URS Forestry (2004). *Profile of the Value of the Timber Industry in the South West Slopes Region of New South Wales*. Report prepared for the Riverina Regional Development Board, August 2004.

Disclaimer

The Commonwealth of Australia acting through the Bureau of Rural Sciences and the Forest and Wood Products Research and Development Corporation has exercised due care and skill in the preparation and compilation of the information and data set out in this publication. Notwithstanding, the Bureau of Rural Sciences and the Forest and Wood Products Research and Development Corporation their employees and advisers disclaim all liability, including liability for negligence, for any loss, damage, injury, expense or cost incurred by any person as a result of accessing, using or relying upon any of the information or data set out in this publication to the maximum extent permitted by law.

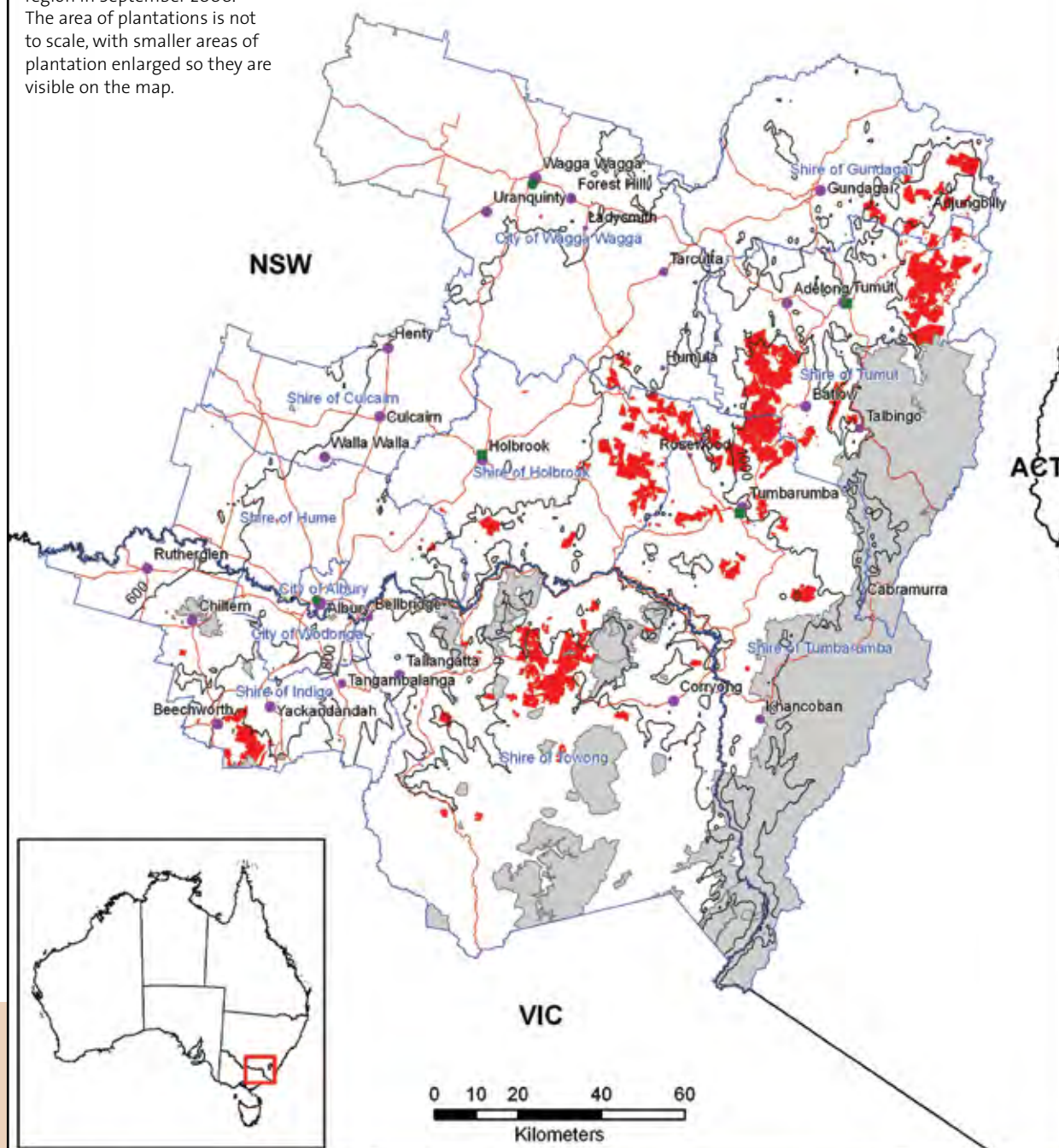
© Forest and Wood Products Research and Development Corporation 2005

ISBN 0 642 47565 7

This work is copyright. Apart from any use as permitted under the Copyright Act 1968, no part may be reproduced by any process without prior written permission from the Commonwealth. Requests and inquiries concerning reproduction and rights should be addressed to the Commonwealth Copyright Administration, Intellectual Property Branch, Department of Communications, Information Technology and the Arts, GPO Box 2154, Canberra ACT 2601 or at www.dcita.gov.au/cc
 Design by Carbon Creative Pty Ltd, Canberra

» THE SOUTH WEST SLOPES REGION

This map shows the distribution of plantations in the case study region in September 2000. The area of plantations is not to scale, with smaller areas of plantation enlarged so they are visible on the map.



Population	Plantation Type	Industry Type	Rainfall_(mm)
• <200	Hardwood	▲ Particleboard	— 400 - 1000
• 201 - 500	Softwood	■ Plywood/veneer	— Road
• 501 - 5000	Reserve	• Pulp/paper	
• >5001	Local Government Area	■ Sawmill	

Source: Plantations Layer - National Forest Inventory (2001).
LGA Layer - ABS Australian Standard Geographic Classification (2001).
Towns Layer - ABS Census of Population and Housing (1996).



Australian Government
Bureau of Rural Sciences