



Social Assessment NSW Lower North EAST CRA Regions

A report undertaken for the NSW CRA/RFA Steering Committee
22 September 1999

A Report undertaken for the NSW CRA/RFA Steering Committee. This includes the projects NA 58/ES, NL 06/ES, NL 07/ES and NL 09/ES

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This report has been possible through the participation of key stakeholder groups, forest management agencies, forest industries, their employees and contractors, and communities. The Social Assessment Unit acknowledges this important contribution

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SOCIAL ASSESSMENT REPORT
LOWER NORTH EAST NSW
COMPREHENSIVE REGIONAL ASSESSMENT
FOR THE
REGIONAL FOREST AGREEMENT

November 1998

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EXECUTIVE SUMMARY

The Lower North East NSW social assessment has defined the demographic characteristics of the region and of those people and communities that depend on the forests in the region. A social profile of the social conditions within case studies is described as well as the recent history and community vision from the perspectives of those communities. In addition, community attitudes to forested lands in the region have been sought, and a history of changes and mitigation processes in the region. People who depend of forest-based industries are linked to communities of residence through analysis of primary research data.

The following is a summary from a series of technical projects which were proposed and approved by the joint CRA Technical Committee and which are separately available.

The approach taken to social assessment was to make an assessment of the sensitivity to forest use and management changes at the community or township level. Communities to be included in the assessment for sensitivity to changes in forest management were broadly selected on the basis of forest industry presence, confirmed in consultation with industry and stakeholder groups.

The final list of communities under consideration in the Lower North East comprehensive assessment phases were: Bellingen, Bulahdelah, Kempsey, Kendall, Bowraville, Walcha, Dungog, Stroud, Gloucester, Millfield, and Wauchope.

Social indicators used in the social assessment

As part of the initial development of the assessment framework, the Social Assessment Unit of the Department of Primary Industries and Energy and the Technical Committee approved a range of social indicators which may be used in the assessment of impacts following the identification of land-use options. Broadly, these options were:

- Population changes
- Economic diversity
- Employment and labour force
- Infrastructure and amenity
- Community vitality
- Social well-being
- Community resilience
- Mitigative change factors
- Community attitudes

Regional profile

The region covered by the Lower North East social assessments includes 24 local government areas. These local government areas, described in detail in the regional profile, are Armidale, Bellingen, Cessnock, Dumaresq, Dungog, Gloucester, Gosford, Greater Taree, Great Lakes, Hastings, Hawkesbury, Kempsey, Lake Macquarie, Maitland, Muswellbrook, Nambucca, Newcastle, Nundle, Port Stephens, Scone, Singleton, Uralla, Walcha and Wyong. Hawkesbury local government areas has not been included in this regional profile.

The Lower North East study area has a steadily growing population. In the period 1991 to 1996, the population change in the Lower North East study area (5.10%) was similar to that of New South Wales (5.34%).

Within the study area, the fastest growth occurred in the south eastern section of the study area around the central and mid north coast. The local government areas with the highest growth rates were Port Stephens (17.35%), Hastings (15.92%), Wyong (15.47%), Gosford (12.33%) and Great Lakes (10.15%).

Population decline occurred in the northern inland areas of Walcha (-10.01%), Armidale (-1.14%) and Uralla (-0.15%).

The 1996 census figures showed unemployment was higher in the Lower North East study area (11.84%) than in New South Wales (8.8%). Unemployment rates ranged from 19.6% in Kempsey to 5.4% in Dumaresq.

The Australian Bureau of Statistics 1996 census showed 3312 people were employed in the timber industry, including both hardwood and softwood sectors, in the Lower North East area. Of these, 681 were employed in forestry and logging, 1015 were employed in sawmilling and timber dressing and 1616 in other wood product manufacture. These figures do not include those employed in the local government areas of Newcastle and Nundle. Therefore they under-represent timber industry employment in the Lower North East area.

Based on available information, the largest proportions of people working in forestry and logging were employed in the Greater Taree and Walcha local government areas, each accounting for 12.77% of this category. The largest category of those employed in sawmilling and timber dressing (15.96%) was those employed in the Great Lakes local government area. Other wood product manufacture was focused on Gosford (20.73%) and Wyong (20.42%).

Summary results of case study communities

A case study community approach has been taken to the detailed social assessment work as described in the chapter Methodologies. Results of these studies are presented here, including perspectives from the case study community. Participative workshops were not held in all case study communities, however, and qualitative data has been obtained from secondary sources where available. The following case study summaries provide socio-demographic data to agreed social indicators.

Bellingen community profile

- Population 1996: 2690 people (1991: 2301 people);
- Population change 16.9%;
- Median age 1996: 34 years (1991: 34 years);
- Dependency ratio 43.62%;
- Unemployment rate 1996: 17.6%;
- Major industries: health and community services (17.76%); retail trade (13.36%); manufacturing (11.8%); education (11.5%); accommodation, cafes and restaurants (8.2%);
- Fifty six people employed in timber industry 1996 (ABS);
- A change from predominantly timber industry and farming base. Three quarters of sawmills in the area closed;

- An influx of people looking for an alternative lifestyle has meant changes in community culture, the development of a strong arts and crafts focus, and an expansion in ecotourism;
- A multi-purpose hospital with medical, surgical, paediatric and emergency services; also an immunisation clinic, physiotherapy, mental health, disability and other services;
- A range of children's services, youth services, unemployment services and other services;
- Numerous community halls, environment and conservation groups, service clubs, performing arts groups and sports and leisure groups;
- A public high school, primary school, pre-school, and two long day care centres;
- An active community trying to develop alternative industries to improve its local employment rates, economic base, and to encourage eco-tourism.

Summary of sensitivity

- Some conflict of values between traditional and new residents around forest values and management;
- A perceived need to maintain traditional cultural values and forest uses and capitalise on tourism potential;
- High unemployment rates and perceived need to develop sustainable small industries;
- A number of small mills in the area reliant on private property. Recent job losses in the largest mill in the town.

Bowraville community profile

- Population 1996: 884 people; 1991: 969 people;
- Population change -8.77%;
- Median age 1996: 33 years; 1991: 34 years;
- Dependency ratio 44.7;
- Unemployment rate 1996: 21%;
- Median weekly household income 1996: \$300–\$500;
- Major industries include retail (15.28%); manufacturing (14.41%); education (9.6%); and health and community services (8.73%);
- Eleven employed in the timber industry in 1996 (ABS);
- Major contraction of the timber industry, closure of mills, loss of mill and contracting jobs. Now only two mills, Mitchells and Langhams, both dependent to some extent on state forests;
- A central school (K–10), primary school, preschool, and alternative school;
- Health services include dental, general practitioners, and a pharmacy, early childhood clinic. Monthly outreach from Coffs Harbour Women's Health Centre;
- Community services include a range of supporting and leisure facilities, and Aboriginal-specific services reflecting the indigenous population including health, culture, TAFE programs, public housing, and a strong Aboriginal Christian ministry through the Catholic church;

- Closure of Midco smallgoods factory in 1998 meant loss of income for 36 families in town;
- Arrival of 14 new families in town in October/ November 1998;
- Growing tourist industry in town, supported by community initiatives;
- New agricultural pursuits include growing garlic, hemp, liquorice, teatree and macadamia nuts.

Summary of sensitivity

- New industries developing and an identified need for feasibility studies for these;
- Now only partially dependent on the timber industry, mostly an agricultural service town.

Bulahdelah community profile

- Population 1996: 1113 people (1991: 1092);
- Population change 1.92%
- Median age 1996: 40 years (1991: 38 years);
- Dependency ratio 41.22%;
- Unemployment rate 1996: 6%;
- Major industries include wholesale and retail trade (20.74%), health and community services (12.6%), and accommodation, cafes and restaurants (10.5%). Others are manufacturing (13.2%), agriculture, forestry and fishing (8.66%);
- Sixty-one people in the town directly employed in the timber industry (ABS 1996);
- A closure of two mills and a loss of around 40 jobs;
- A loss or downsizing of essential services;
- Expansion of tourist activities and services;
- A 13 bed hospital providing accident and emergency services, a 40 bed nursing home, an ambulance and community transport service, one doctor and one dentist;
- Most community services are provided by outreach from Taree, Gloucester, or Forster-Tuncurry. However, Bulahdelah does have sporting clubs, a progress association, and a visitors' information centre;
- A combined high and primary school, a Catholic primary school, and a preschool.

Summary of sensitivity

- A community suffering from a loss of morale and a belief that government does not care about its social and economic well-being. Loss of employment has led to a loss of self-esteem, increases in domestic violence. Mental health worker hours have doubled. Able to pull together to achieve community goals, yet very anxious about its ability to survive;
- A strong association with the timber industry. A perception that changes to forest management, loss of timber resource will close remaining mills and result in further jobs losses, a loss of cultural identity, further break-up of families, and increased crime;
- Some conflict between those who want to maintain/develop Bulahdelah as a timber town and those who want to develop tourism potential.

Dungog community profile

- Population 1996: 2181 people (1991: 2187 people);
- Population change -0.27%;
- Median age 1996: 39 years (1991: 38 years);
- Dependency ratio 42.73%;
- Unemployment rate 1996: 10.6%;
- Median weekly household income 1996: \$300–\$500;
- Major industries include retail (14.85%), education (10.61%), manufacturing (10.48%), health and community services (8.22%) and forest-based industries. Manufacturing closely linked with forest industries as well as dairying and grazing;
- Forty seven employed in the timber industry in 1996 (ABS);
- An influx of either retired or semi-retired people, some developing cottage industries;
- An increase in tourism and tourist based industries;
- Diversification of agricultural production includes olives, grapes and timber plantations;
- Health services including a public hospital, general practitioners, ambulance service, accommodation for adults with developmental disabilities, a baby health centre;
- Two primary schools, one high school, and two preschools;
- Community and welfare services for youth, children, aged, and disability. Also community transport, home based respite and palliative care, and community hostel and nursing home.

Summary of sensitivity

- Large Boral processing plant at Maxwells Creek. 100% reliant on state forest resource. Also timber laminating plant in Dungog.

Gloucester community profile

- Population 1996: 2634 (1991: 2468 people);
- Population change 6.73%;
- Median age 1996: 38 years (1991: 37 years);
- Dependency ratio: 43.90%;
- Unemployment rate 1996 9.1%;
- Median weekly household income 1996: \$300–\$500;
- Major industries include retail (15.61%), manufacturing (12.44%), health and community services (10.92%), accommodation, cafes and restaurants (7.58%) and education (7.01%). Manufacturing in Gloucester is closely associated with the dairy industry;
- Seventy people employed in the timber industry (ABS 1996);
- Closure of the Boral mill in March 1998 which employed 31 people;
- Developing tourist based industries;

- Opening of a new coal mine three to four years ago, currently employs 120 people. Employees high disposable incomes are being spent in town;
- Health services include a hospital which provides general medical, geriatric, paediatric, and palliative care, a community health service, ambulance, general practitioners, pharmacy and dentist;
- A high school, two primary schools, and community training centre;
- Numerous community services for children, youth, aged, and disability. Emergency services. A high level of voluntary committees and community service organisations associated with sport, self-help support groups, arts and crafts etc.

Summary of sensitivity

- Closure of Boral mill may affect Australian Consolidated Foods factory;
- Increasing employment at coal mine and high disposable incomes may offset some impacts from mill closure;
- Low.

Kempsey community profile

- Population 1996: 8630 people (1991: 9039 people);
- Population change -4.52%;
- Aboriginal and Torres Strait Islander population 1996: 1166 (13.51%), highest on the North Coast;
- Median age 1996: 35 years (1991: 34 years);
- Dependency ratio 41.62%;
- Unemployment rate 1996: 18%;
- Major industries: retail (20.9%), wholesale (3.94%), health and community services (12.11%) and manufacturing (11.3%);
- Thirty-nine employed in the timber industry in 1996 (ABS);
- Large decline in essential services leading to employment losses in electricity, gas and water, communications, manufacturing and primary industries. Closure of Midco small goods factory 1988 which had employed 250 people;
- Expansion of Kempsey Timbers as a major value-adding plant, leading to an increase in employment opportunities;
- A comprehensive range of health services including disability, aged care, Aboriginal, women's, home nursing, palliative care, dental, counselling, drug and alcohol;
- A TAFE college, two high schools, and four primary schools. A high school and two primary schools are funded under the disadvantaged schools program;
- A large number of youth and children's services, service clubs, specialist Aboriginal programs, employment services, law and order services, church groups, and sporting groups.

Summary of sensitivity

- Major value-adding plant currently expanding. Forestry Industry Structural Adjustment Program assistance (1998);
- A perception that the creation of reserves will close mills, result in a loss of timber industry infrastructure and specific skills, and negatively affect plantation development potential;
- Low community morale, high unemployment, community conflict between employed and unemployed, and Aboriginal and non-Aboriginal residents.

Kendall community profile

- Population 1996: 715 people (1991: 714 people);
- Population change 0.14%;
- Median age 1996: 33 years (1991: 32 years);
- Dependency ratio 39.52%;
- Unemployment rate 1996: 24%;
- Major industries include retail (12.92%), manufacturing (10.83%), transport and storage (10%), construction (9.58%) and accommodation, cafes and restaurants (8.75%);
- Ten people employed in the timber industry in 1996 (ABS). Boral mill at Herons Creek major employer for Kendall residents;
- A loss of jobs in the timber industry;
- Changing from a strong agricultural and forestry base to an emphasis on small arts and crafts industries following an influx of new people in the area;
- A loss of young people — moving to other areas to look for employment;
- No health services in town, some outreach services from Laurieton;
- A Central school with high and primary school students and a preschool. TAFE outreach courses provided at the school;
- Very few community services; two community halls, two service clubs, and one church;
- Nearest location for services is Laurieton, the service centre for the Camden Haven area;
- An active, vibrant community generating ideas and activities to develop locally based small industries and improve community services and infrastructure.

Summary of sensitivity

- Perceived need to capitalise on timber industry and skills for development of cottage based industries, a flow-on to tourism development;
- A heavily polluted river has led to fears of increased sickness and negative impacts on the environment. A felt need to have sewerage connected quickly and begin the process of river regeneration.

Millfield community profile

- Population 1996: 468 (1991: 391 people);

- Population change 19.69%;
- Median age 1996: 29 years (1991: 29 years);
- Dependency ratio 35.24%;
- Unemployment rate 1996: 25%;
- Major industries include retail (19.35%), manufacturing (17.74%), health and community services (9.68%), mining (8.87%) and accommodation, cafes and restaurants (8.06%);
- Ten employed in the timber industry in 1996 (ABS);
- Three sawmills in Millfield — two rely on public resource to some extent;
- New settlers, rural subdivisions, mill closures, and development of tourist-based accommodation and other businesses following increase in visitors to vineyards in the area;
- No health services in Millfield. Residents use these at Cessnock;
- A primary school which receives funding under the disadvantaged schools program;
- Very few community services in the village. A post office, school bus service, service club, community hall, sportsfield, park/playground, and tennis court.

Summary of sensitivity

- Some conflict between traditional settlers with strong affiliations with the timber industry and new settlers wanting to develop Millfield as a tourism town;
- A perception that changes to forest management will force mills to close, lead to increased unemployment rates;
- Perception that closure of mills will have negative impact on the few community services in the town.

Stroud community profile

- Population 1996: 598 people (1991: 558 people);
- Population change 7.2 %;
- Median age 1996: 36 years (1991: 36 years);
- Dependency ratio 43.89%;
- Unemployment rate 1996: 13.9%;
- Median weekly household income 1996: \$300–\$500;
- Major industries include manufacturing (13.9%), agriculture forestry and fishing (12.83%), transport and storage (9.63%), retail (8.56%) and health and community services (8.02%);
- Twenty-two employed in the timber industry in 1996 (ABS);
- Most health services are outreach from Forster-Tuncurry, Taree or Gloucester. Stroud has a doctor's surgery, ambulance station and community health centre;
- A primary school and a preschool;

- Community services include a hostel, aged day care, community transport and a meal service. A number of voluntary groups which support emergency services, business, senior citizens, youth and children's services and recreational activities;
- Three mills closed in the last 10 to 15 years, leaving only two. One large mill 60% dependent on state forest resource;
- Traditionally a dairying area, now 38 to 40 in the district producing chickens for meat for Steggles and Inghams. This has created extra employment for people who live in the town;
- Influx of new settlers, using it as a dormitory town and working in Raymond Terrace, Kooragang and Newcastle;
- Opening of new coal mine in Stratford has created employment for residents of Stroud.

Summary of sensitivity

- Low.

Walcha community profile

- Population 1996: 1623 people (1991: 1786 people);
- Population change -9.13%;
- Median age 1996: 37 years (1991: 34 years);
- Dependency ratio 36.88%;
- Unemployment rate 1996: 9.3%;
- Major industries include agriculture, forestry, fishing (22.64%), retail (12.74%) and health and community services (9.28%). Primary industry focus on sheep, beef and timber industry;
- A large number of timber industry workers in the town including mill workers, contractors, and bush crew workers;
- Successive events have contributed to a sustained decline of the town and its economy including: a fall in rural commodity prices; a long period of severe drought; closure of mills and timber industry jobs; loss of or reduction of public sector/community services;
- A hospital with emergency, paediatric, and aged care services. A community health services providing a wide range of specialist services, which outreach from Tamworth and Armidale;
- Walcha has an Adult Community Education, a central school (K–12), a Catholic primary school, and a preschool/kindergarten;
- A range of youth, aged care, and emergency, services mostly provided by volunteers. Business, arts, historical support/development groups;
- A perception that the future social and economic well-being of Walcha is highly dependent on agriculture and the timber industry;
- A perception that there is an opportunity for tourism especially nature-based tourism, a secondary, not primary industry;

- Community very anxious about the future of Fennings mill and the impact on employment, community services, and community morale if it closes.

Summary of sensitivity

- Fennings mill employs 51 people and is reliant on State forest resource;
- A potential to attract secondary businesses, encourage softwood ventures and farm forestry in joint ventures with State Forests and private land owners if a timber industry continues to operate in the town.

Wauchope community profile

- Population 1996: 4963 people (1991: 4305 people);
- Population change 15.3%;
- Median age 1996: 37 years (1991: 36 years);
- Dependency ratio 41.95%;
- Unemployment rate 1996: 16.6%;
- Major industries include retail (19.74%), manufacturing (11.49%), health and community services (11.02%);
- There has been a decline in the timber industry since the late 1980s. The plywood mill closed in 1993 and the last sawmill closed in 1996. The town also lost jobs with the rationalisation, regionalisation and downsizing of public utilities;
- Sixty nine people employed in the timber industry in 1996 (ABS);
- A decline in social services, infrastructure, and small business;
- A significant net migration of 15–29 years olds between 1986 and 1991;
- A loss of people with specialised skills/highly skilled from the area;
- Wauchope health services include a public hospital run by a private operator, and a community health service;
- Wauchope has a TAFE college, a high school, two primary schools, and two preschools.;
- Community services include youth services, emergency services, post office, banks and numerous clubs. Town has a thriving voluntary sector with numerous events organised by clubs and chamber of commerce;
- A perception that development initiatives are towards Port Macquarie, that this is at the expense of Wauchope;
- A perception that a higher percentage of people in Wauchope were affected by changes to forest management than happened in Newcastle with the closure of BHP;
- Attempts to develop tourism base largely unsuccessful. Timbertown closed in early 1998 after proving to be unprofitable.

Summary of sensitivity

- A perception that the proposed deregulation of the dairy industry will be the last straw for Wauchope.

- A belief that attracting businesses and industries will be very difficult to achieve; in competition with other parts of rural communities in similar situations, compounded by a lack of an industrial area.

Summary results of forest-related occupational communities

Demographic and occupational information was gained from four types of surveys:

- Forest and forest product workers covering employees working in hardwood mills, private property mills, and contractors' employees (bush crews on salary);
- Contractors and subcontractors covering harvesting and hauling where work was undertaken on a contract basis;
- Other forest users including beekeepers and graziers;
- Tourism operators.

Summaries of the characteristics are presented below. The full details are available in the chapter 'Occupational Communities'.

Hardwood mills (principally dependent on State forest resource)

Age	Between 17 and 70 years. A mean of 34 years
Annual salary	49.6% \$12 000–25 000
Household income	50.4% >\$25 000
Average length of time in the industry	50% >10 years
Aboriginal representation in sample	4.5%
Education	
Communities of residence (>4% of sample)	Kempsey (17.5%), Walcha (17.1%), Bulahdelah (13.8%), Bellingen (4.5%)
Dependent children	43.5% have dependent children
Home ownership	49% either own house outright or are paying off a mortgage

Source: AFFA Social Assessment surveys 1998 (N = 246)

Hardwood processing (principally dependent on state forest resource)

Age	Between 18 and 63 years.
Annual salary	54% \$12 000–40 000
Household income	37% >\$40 000
Average length of time in the industry	50% >10 years
Aboriginal representation in sample	2.4%
Education	47.6% only completed Year 10
Communities of residence (>4% of sample)	Raymond Terrace (22.6%), Port Macquarie (10.7%), Wauchope (8.3%), Herons Creek (7.1%), Laurieton (7.1%), Kendall (6.0%)
Dependent children	43.5% have dependent children
Home ownership	57.1% either own house outright or are paying off a mortgage

Source: AFFA Social Assessment surveys 1998 (N = 84)

Hardwood salvage (principally dependent on state forest resource)

Only three employees who responded to surveys worked in sawmills that are solely reliant on hardwood salvage. To maintain confidentiality, survey data will not be provided for these workers. However, they will be taken into account in any impact assessment phase.

Hardwood mills (depending primarily dependent on private property resource)

Age	18–69 years. A mean of 37 years
Annual salary	47.1% \$12 000–25 000
Household income	39% >\$40 000
Average length of time in the industry	65% >13 years or more. Mean 18 years
Aboriginal representation in sample	12%
Education	17% completed Year 12 or TAFE certificate
Communities of residence (>4% of sample)	Gloucester (41%), Cessnock 24%, Stroud (12%), Millfield (12%), Quorobolong (6%)
Dependent children	47% have dependent children
Home ownership	59% own house outright or are paying off a mortgage

Source: DPIE Social Assessment Surveys 1998 (N = 17)

Contractors and subcontractors

Age	Mean age 39 years
Annual salary	
Household income	20.0% \$12 001–25 000, 26.7% \$25 001–40 000
Average length of time in the industry	90% >10 years
Aboriginal representation in sample	0.0%
Communities of residence (>4% of sample)	Macksville (20.0%),; Walcha (13.3%), Karuah (6.7%), Wauchope (6.7%), Wingham (6.7%), Port Macquarie (6.7%), Dungog (6.7%), Gosford (6.7%), Dorrigo 6.7%), Booral (6.7%), Nahiack (6.7%), Taree (6.7%)
Dependent children	40% have dependent children
Home ownership	60% own house outright or are paying off a mortgage

Source: AFFA Social Assessment Surveys 1998 (N = 15)

Contractor employees (bush crew)

Age	22–56 years. Mean age 32.7 years
Annual salary	
Household income	37.5% earn \$25 000–40 000
Aboriginal representation in sample	6%
Communities of residence (>4% of sample)	Wauchope (37.5%), Dungog (31.3%), Kempsey (6.6%), Wootton (6.6%), Gosford (6.6%)
Dependent children	
Home ownership	

Source: AFFA Social Assessment Surveys 1998 (N = 17)

Haulers

Age	27–48 years. Mean age 37 years
Annual salary	
Household income	46.7% \$25 001–40 000
Average length of time in the industry	60% > 10 years; mean years 7.7
Aboriginal representation in sample	0.0%
Communities of residence (>4% of sample)	Walcha (33.3%), Wingham (26.7%), Bulahdelah (13.3%), Stroud (6.7%), Karuah (6.7%), Macksville (6.7%), Port Macquarie (6.7%)
Dependent children	67% have dependent children
Home ownership	60% own outright or are paying off a mortgage

Source: AFFA Social Assessment Surveys 1998 (N = 15)

Other forest users

Beekeepers

Age	32–68 years. A mean of 46.6 years
Household income	27% \$12 001–25 000, 27% \$25 001–40 000
Aboriginal representation in sample	0.0%

Communities of residence (>4% of sample)	Taree (13.3%), Walcha (6.7%) , Bulahdelah (6.7)%, Kempsey (6.7)%, Wauchope (6.7)%, Port Macquarie (6.7)%, Wootton (6.7)%, Tamworth (6.7)%, Sydney (6.7)%, Comboyne (6.7)%, Mittagong (6.7)%, Gunnedah (6.7)%, Carey Bay (6.7)%, Warrell Creek (6.7)%
Dependent children	33.3% have dependent children
Home ownership	93% own house outright or are paying off a mortgage
Family employed	73% employ family members full/part-time

Source: AFFA Social Assessment Surveys 1998 (N = 15)

Occupational leases

Age	29–87 years. A mean of 42 years
Household income	27% \$25 001–40 000, 27% >\$40 000
Aboriginal representation in sample	0.0%
Communities of residence (>4% of sample)	Kempsey (9.1%), Cessnock (9.1%), Wauchope (9.1%), Ourimbah (9.1%), Cooranbong (9.1%). 54.5% unspecified
Dependent children	36% have dependent children
Home ownership	100%

Source: AFFA Social Assessment Surveys 1998 (N = 11)

Tourism

Age	35–65 years. A mean of 41 years
Household income	50% >\$40 000
Aboriginal representation in sample	0.0%
Communities of residence (>4% of sample)	Gloucester (18.8%), Dungog (18.8%), Bellingen (18.8%), Bulahdelah (12.5%), Wauchope (6.3%), Newcastle (6.3%), Walcha (6.3%), Dunbogan (6.3%), Port Macquarie (6.3%)
Dependent children	31% have dependent children
Home ownership	81% own house outright or are paying off a mortgage

Source: AFFA Social Assessment Surveys 1998 (N = 16)

Locational impact of forest-based industry expenditure

This research project has examined the locational consequences of forest industry expenditure resulting from change in the native hardwood timber industry in the Lower North East CRA/RFA region of New South Wales. The approach adopted has employed a ‘cascade’ principle, of conducting research with businesses in the timber industry itself (mills, contractors, hauliers) and consequently with local businesses who are suppliers to the timber industry.

The research was conducted using face-to-face interviews with selected businesses, together with questionnaire surveys carried out face-to-face, by post and telephone, with: (i) all known businesses in the timber industry, and (ii) suppliers to the industry. The relatively small number, and the variability of responses from timber industry businesses in the region has put a premium on careful interpretation of the results.

Businesses in the timber industry

Available information suggests that in the Lower North East there are about 122 milling businesses, employing about 1000 individuals. These mills vary in size from technically advanced processing mills employing over 80 people, to small mills operated — perhaps on a part-time basis — by a single person.

The Newcastle region is the most significant focus of timber industry activity in the Lower North East region, followed by a range of secondary centres including Coffs Harbour, Kempsey, Walcha, Wauchope and Bulahdelah. Macksville, Gloucester and Gosford also function as local centres for the industry.

The average wage for mill company employees in the Lower North East region is about \$25 300 per annum, with a range over individual sites of \$30 100 down to about \$12 000.

The average wage for contractor employees in the Lower North East region is about \$28 000 per annum, with a range of \$31 000 to \$15 000.

Just over half (54%) of mill employees live within ten kilometres of work, and just over three quarters (77%) live within 20 kilometres. Almost all live within 60 kilometres.

Expenditures by timber mills in the local economy (outside the timber industry itself), amount to about \$12 200 per employee per annum on average.

There has been much change in the timber industry in the Lower North East region in recent years, with several major mills having closed. The present survey of operating mills shows that both large and small have experienced employment gains and losses. However, based on the evidence of the sample, there appears to have been little change in overall employment levels, and virtually no change in average annual wage (\$25 300).

Contractors' businesses may have experienced a small rise (3%) in annual wages over the last three years.

Many timber industry businesses contribute in cash or in kind to their local communities, recognising that *'it is important to put money back into the community'*.

Levels of optimism about the future for companies in the timber industry vary from high optimism to deep pessimism. These attitudes do not appear from the sample to be dependent on the size of the mill operation.

Specific opinions expressed by mills and contractors in face-to-face interviews emphasised:

- the primary concern for resource security, and the consequences of uncertainty for their businesses
- small operators particularly expressed a sense of grievance about what was seen as discriminatory treatment of small mills by government vis-a-vis larger mills re decisions being taken about their future.

Local businesses supplying the timber industry

The businesses in the sample were concentrated on those sectors nominated by the timber industry businesses as suppliers to their industry: namely, automotive repairs/tyres; fuel/petroleum; business services; machinery wholesaling and manufacturing; general retailing and financial services etc. Almost all were 'local' in that the head office was within the Lower North East area in New South Wales.

The suppliers in the sample were concentrated in Walcha, Port Macquarie, Taree, Wauchope, Kempsey, Wingham and Gloucester, although a number of other townships were represented.

As of June 1997, the average staff numbers were: full-time 4.8; part-time 4.9; and casual staff 3.0. As of June 1998 the averages were: full-time 4.0; part-time 3.8; and casual 3.0. Thus, full-time averages moved very slightly downwards and part-time averages moved down from 4.9 to 3 per supplier.

Eleven per cent of the sample had a low gross income (up to \$100 000) as at June 1997 and this proportion had decreased to 8% by June 1998, a drop of 3%. The proportions in the \$100 000–\$200 000 bracket rose by 4%. There were other small decreases in numbers in one income bracket being 'matched' by small increases in another. The median gross income remained the same in the two financial years. Highest income was apparent amongst suppliers in the automotive sector: retailers, fuel suppliers etc.

Most suppliers had 50 or more customers with the lowest client bases showing in the auto repairs/tyres/service; transport/storage, and property/business services sectors. On average over the total sample of 120 suppliers, 35% of sales have been to the 'top 5' (largest customers. Approximately 15% placed only from 1–10% with the top five customers. Those

sectors with the highest concentration of sales in the top five customers are construction (56%), manufacturing (44%), petrol/fuel (42%) and transport/storage (38%).

The median gross wages recorded by 72 businesses as going into the community was \$75 000–\$100 000, and this remained constant across the two financial years 1996–97 and 1997–98. Nevertheless over the total sample there was a decline in the lowest gross wage figures between the two years of 4%, which was matched by a rise of 4% in the next highest gross wage figure.

The median amount spent on goods and services by the suppliers to the timber industry was \$50 000: 13% spent \$500 000 or more and 3% spent over \$2 million. One in four were at the lowest end of the scale, spending between \$1000 and \$20 000, and a further 28% spent between \$20 000 and \$50 000.

Three sectors appeared to spend larger amounts on goods and services than others: general retail trade, wholesale machinery, and the construction sector.

On average 61% of the spend on goods and services by the suppliers was spent locally. Three sectors were more likely than others to record a high local spend: petrol/fuel, finance/insurance, and property/business services. All three have a low dependency on the timber industry. Those with higher dependency for sales to the timber industry (transport/storage, construction wholesale) were sectors with relatively low average of purchases going into the local area.

The level of optimism across the total sample was about average at 3.2 out of 5. One in three said they were optimistic and about one in four sat ‘in the middle’ at 3 out of 5 (the scales runs from 1= not at all optimistic to 5 = very optimistic).

Community attitudes survey — Lower North East region

A telephone survey of 111 respondents living in the region was undertaken in July 1997. The following social values were recorded:

Social values of forests — Lower North East New South Wales	% agree
▪ Aboriginal sites of significance should be protected	61.8
▪ Environmental protection cannot co-exist with forestry industries	28.1
▪ The forestry industry can be economically important for some small communities, and therefore should be maintained	79.3
▪ Australia should draw its timber products from Australian forests rather than overseas forests even if overseas timber products are cheaper	66.0
▪ I would like to see more forested land conserved even if it means a loss of state income from timber harvesting	62.0
▪ Tourism from conserving forested areas may generate regional income and employment offsetting possible losses in the timber industry	69.0
▪ Timber harvesting may have an adverse impact on the abundance of native plants and animals. If the environmental costs are too high it might be better to compromise on forestry activities	67.0
▪ The current management of forested land is ecologically sustainable	28.0
▪ Forestry jobs may be lost to create environmental reserves. This may affect some small communities. If this is the case, it is unfortunate for these communities, but we need environmental reserves for the benefit of future generations	50.0
▪ Some forested areas are rarely visited by people. It is personally satisfying to know that there is forested land that is untouched by humans even if it is never used for recreational or economic activity	86.4

Source: University of Sydney, Department of Geography, Consultants, 1997

Survey of mitigation and adjustment processes

A survey of structural adjustment and mitigative process in the Lower North East region was commissioned as part of the social assessment. The study intended to document the experiences of workers and contractors in the native hardwood timber industry affected by forest industry structural adjustment from January 1996 to August 1998. The study was completed by Rush Social Research consultants, and the data is held by NSW Department of Urban Affairs and Planning.

Social impact assessment modelling

Following collection of assessment data, a computer modelling exercise has been undertaken to identify community sensitivity to forest management changes and their capacity to respond to change.

page for diagram

Figure: Comparative community well-being — Lower North East

1 INTRODUCTION

Social assessment within the Regional Forest Agreement process

The two broad objectives defined in the National Forest Policy Statement are:

- a comprehensive and adequate reserve system;
- an efficient, viable and competitive timber industry.

In achieving these two objectives for the Lower North East region there may be social consequences for communities.

The social consequences, both positive and negative, of policy changes to forest use and management in the Lower North East Regional Forest Agreement region will largely occur at the individual and community level, while the policy settings will be driven by State and national objectives.

The social assessment work was negotiated through an Economic and Social Technical Committee which included Commonwealth and State agencies and stakeholder groups representing the interests of conservationists, industry and union members.

Social impact assessment

Social impact assessment follows a comprehensive social assessment at a community level. Social Impact Assessment aims to:

- address some of the equity issues involved in achieving the objectives of the National Forest Policy Statement;
- highlight any undesirable or avoidable consequences in meeting these objectives;
- model probable community responses to various change options.

While the objectives of the comprehensive and adequate reserve system are driven by the conservation criteria, and have defined targets, social and economic objectives are not readily quantifiable. However, within the Regional Forest Agreement process, social assessment will identify communities which may experience significant social consequences and suggest where these may be enhanced or minimised.

Social objectives

Social objectives within the Regional Forest Agreement process are defined at the community level. These are to:

- minimise social dislocation;
- minimise social disadvantage;
- minimise social costs arising from any land-use changes;
- enhance community vitality and social cohesion;
- maximise employment opportunities and skills development within communities;

- identify previous and proposed community mitigation measures.

A broad description of some of the key identifiers is provided below.

Social dislocation

Social dislocation may occur at the community level when a significant proportion of the population relocates and/or changes its employment status. Measures include demographic changes, changes in age structure, and significant numbers of dependant young and older people.

Social disadvantage

Social disadvantage may occur at the community level with land-use changes. Measures include unemployment levels, participation in the workforce levels, relative median incomes, and significant numbers of single parent and/or absent parent families.

Social costs

Social costs such as welfare payments, increases in health requirements, distances to travel to attend schools and access community services, arising from land-use changes may affect a community's viability. Measures include the availability and extent of transport facilities, education facilities, and health facilities and other community services.

Community vitality and social cohesion

The quality of life for communities will be affected by the extent and type of cumulative changes and the ability of communities to adapt to these changes. Measures include adequate leadership, and optimism about alternative visions for social and economic development.

Employment opportunities

The availability/accessibility of employment and training opportunities will affect communities which are more sensitive than others to hardwood resource supply issues.

The key indicators outlined in the table below are based upon outcomes from a Social Indicators Workshop that were agreed to at a Montreal Process Conference held in Tasmania, November 1996. National stakeholders were involved in workshops at this conference.

The table below incorporates the social indicators developed above, adapting them to maximise information gathered from the approved social assessment data collection projects.

The methods used in these projects provide for the collection of both quantitative and qualitative data. This was obtained through published documents, surveys, community workshops, and through networking widely across the region. The data has been collected with scientific rigor and cross-checked to ensure validity, and will be used at the integration phase to identify and describe sensitive communities, and for predicting impacts from a number of resource scenarios.

Table 1: Social indicators

Key indicator	Sub-indicators	Measures	Source
Socio-demographic structure of communities	Age structure of communities and region Ethnicity Level of household income Mobility	Percentage of population per age category	ABS
		Country of birth	ABS
		Annual family and household income	ABS
		Usual residence 1991 and 1996	ABS
		Nature of occupancy	ABS
		Percentage of population per age category	ABS
		In/Out migration	ABS DUAP
Economic structure of communities	Size/range of local businesses Locational dependence on forest-based industries	No. and size of business per category	Aust On Disk
		Level of dependence by location	ABS
		No. of employees	Business surveys Councils
Employment and labour force characteristics	Unemployment levels Industry diversity Occupational community characteristics	Unemployment levels 1991 and 1996 and State averages	DEETYA/ABS
		Employment by industry	ABS
		Percentage of labour force in forest industries	ABS/ Surveys
		Age	Surveys
		Length of residence	Surveys
		No. of school-age children	Surveys
		Income	Surveys
Community services and infrastructure	Current service provision and trends across key service areas Identification of any threshold services Lobbying capacity	Place of residence	
		No. and type of health services	Health Dept
		No. and size of schools	Education Dept
		No and type of retail outlets	Aust On Disk
		Level of post office service	Aust Post
		No. of financial service areas	Aust On Disk
		Appropriate comparisons , trends and policy thresholds for key service areas Level of past activity on local service issues	Relevant departments Network
Additional qualitative stressors	Identification of cumulative change over past 15 years at 2 year intervals Service closures	Compilation of qualitative data	Lit review
		No. and range of services lost	Workshops/reports
		Significant industry trends	Councils/ABARE/ABS
Community vitality	Rural trends Community events Past management of change Community participation Occupational communities participation Income levels		
		No. of annual events	Workshops/Council
		Analysis of qualitative data	Network/Council
		No. and range of community organisations	Council
		Average involvement in community organisations	AustOnDisk Surveys/ABS
Social well-being	Attachment to place (occupational community)	Average household income	
		No. of family members in area	Survey
		Length of family residence in area	Survey
	Sense of community	Reasons for living there	Survey/workshops
		Occupational community responses	Surveys/workshops
Mitigative change factors	General community responses Structural adjustment packages Other community mitigation Alternative industry or community development options		
		Situation report and analysis	Survey
		List no. and types	Mitigation project Network
			Workshops
		List no. and types	Council Development organisations ABARE
Community attitudes	Social values of forests Attitudes to policy proposals	Regional community attitudes	Community attitudes survey
		Stakeholder attitudes	Regional Forest Forums

2 METHODOLOGIES

A multiple method approach was taken to the Lower North East Social Assessment. The following describes the research methods applied for each project.

Post-impact analysis and regional profile methodology

A significant aspect of social assessment is to review past patterns of change within the region and to provide socio-demographic baseline data and a context of change in forested communities and the region. Primarily this is achieved through researching previously published material that provides insights into the trends and responses of communities within the study region.

The objectives of the post-impact analysis are:

- to provide a review of national and international studies relating to social impacts on resource-based communities;
- to provide a review of social impact studies conducted within the Lower North East CRA/RFA region;
- to develop a regional profile for the Lower North East region; and
- to develop a profile of service sectors within this region.

Most of this information was collected through desktop research.

Community case studies methodology

Detailed case studies have been developed as part of a social values project undertaken in the Lower North East Region.

Various methods were used to develop a profile of each case study area. They include an assessment of the social and economic structure of communities, a historical assessment of significant events in the community, and an outline of community concerns and visions for the future.

The analysis draws upon data collected from workshops, interviews, and participant observation methods. Extensive fieldwork was undertaken by Anni Chilton, the Forest Community Coordinator for the Lower North East Region.

Criteria for selection

The case study communities were selected for the likelihood of significant social impacts as a result of changes to forest management and land tenure.

Bellingen, Kempsey, Kendall, Bulahdelah, Walcha, Millfield, Wauchope, Dungog, Stroud, Bowraville, and Gloucester were approved by the Social and Technical Committee as case study communities.

Case studies were approached in three different ways:

- case studies included in the Post Impact Analysis — Gloucester, Bowraville and Wauchope. These communities have been recently studied in either State Forest Environmental Impact Statement, Deferred Forest Areas and/or an Interim Assessment process;
- communities studied from secondary sources — Stroud and Dungog;
- community workshops were conducted in Walcha, Bulahdelah, Kendall, Kempsey, Millfield and Bellingen.

Community workshop process

Community workshops were conducted in Bellingen, Kempsey, Kendall, Bulahdelah, Walcha and Millfield. Community members represented specific industry groups, conservation groups, and community infrastructure (commerce, health, education, communication, recreation). Indigenous communities, local government and land-holders were invited to attend.

Participants were asked to focus on a number of questions designed to reflect the characteristics of their community, including:

- What have been the significant events in your community since 1980?
- How did the community manage two of these events (one positive and one negative)?
- How do you feel about your community?
- What are your visions for your community?

Participants were also asked to consider the potential negative and positive impacts of three public forested land-use scenarios in reference to forest areas deferred from harvesting by the 1996 New South Wales Interim Assessment Process.

- Deferred Areas remain available for conservation and recreational uses;
- Deferred Areas remain available for timber and other industry uses;
- half the Deferred Areas remain available for conservation and recreational uses, and half of the Deferred Areas remain available for timber and other industry uses.

The workshops were conducted by trained facilitators and the outcomes of discussions were noted. Scribes were present at each workshop to record additional information.

Following these workshops, telephone calls were made to individuals and/or organisations to verify information provided at the workshop.

The outcomes of all workshops are included within each community profile. Results of this qualitative data are used to assess a baseline of cumulative stress, well-being and adaptive capacity of each community and are represented in the modelling baselines.

Profiling occupational communities methodology

The objectives of this project were to survey forest-related industry groups for the purposes of:

- linking community dependence to areas of forested land and the social values of forests held by these groups;
- establishing the impact felt to date by these groups from changes to forest management;
- identifying the social use of values of forests held by these groups.

The surveys developed for each occupational community addressed four main content areas:

- demographic characteristics including age, gender, marital status, education, number of children and other dependents, and home ownership;
- business/employment characteristics including the nature of employment, age and structure of the workforce, years worked in the industry, experience in other industries, and education/skill level;
- community characteristics including length of residence, attachment to community, local expenditure, and use of community services;
- attitudes towards the forest debate and perceived social impacts on businesses, individual, families and communities.

Occupational communities were classified into the following groups: mill employees, contractors (including harvesting and hauling contractors), bush crews, other forest users, and tourism operators.

Profiles of these regional communities have been developed based on their response to survey questions.

Sawmills

Initially a NSW State Forest database was used to identify industries in the region economically dependent on the forests. This was extended through liaison with other agencies and industry stakeholders during the 1998 survey period.

Because of the large number of sawmills in the Lower North East region a census approach was not undertaken. Rather a sampling method based on the location of sawmills within or in close proximity to case study communities was chosen. This method ensured that those communities potentially most vulnerable to changes to forest management were adequately assessed. Another consideration was the relatively short-time frame for completion of surveys.

Before undertaking surveys, support from industry stakeholders was requested and obtained.

Methods used to survey mill employees included face-to-face interviews, leaving surveys at the mill and arranging for them to be returned upon completion, and mail-outs.

Agreement to undertake surveys at the mill site was obtained by contacting the owner/manager of the mill before surveying to arrange an appropriate time and survey

method. All care was taken to ensure that face-to-face surveys did not unduly disrupt production lines.

In the event of mail-outs a letter of introduction and explanation of the purpose of surveying and a request to participate in the exercise, was sent to the mill/owner manager.

Prepaid return envelopes were supplied to ensure confidentiality was maintained and to ensure that respondents did not incur any financial cost.

Harvesting and hauling contractors and employees

A database of harvesting and hauling contractors was obtained from State Forests NSW. These businesses were surveyed either through mail-outs or face-to-face, with the majority being surveyed through mail-outs. This took into account the short time frame for completion of data collection and the difficulty of accessing both the business owners and their workers.

In the event of mail-outs, a letter of introduction, explanation of the intent, and request to participate in the exercise accompanied the surveys. Prepaid return envelopes were supplied for each respondent to ensure confidentiality was maintained.

Other forest users

A database of other forest users, including graziers with State forest leases and apiarists, was obtained from State Forests NSW.

This group was surveyed through mail-outs. A covering letter was provided with each mail-out explaining the purpose of the survey, and including a request to participate in the study. Prepaid return envelopes were supplied for each respondent to ensure confidentiality was maintained.

Tourism

A database for tourist operators, accommodation and other tourist-based businesses in the study region was obtained from the NRMA.

This group was surveyed through mail-outs. A covering letter explained the purpose of the survey and included a request to participate in the study. Prepaid return envelopes were supplied for each respondent to ensure confidentiality was maintained.

Review of forest industry mitigation measures, Lower North East

A case study approach determined the impacts of structural change and mitigative measures on the study group. The study group consisted of mill workers, logging contractors and bush crews and lorry owner drivers in the Lower North East CRA region. A proportion of timber workers from private property may be accessed. These were further categorised into sub groups based on criteria identified in the preliminary phases of the study

Qualitative and quantitative data provides an understanding of individual experiences of these impacts. Quantitative techniques involving a survey of workers and business owners provide

direct evidence of the impacts experienced. Qualitative techniques involving in depth face to face interviews provide an understanding of the individual reactions and of the social significance and meanings attributed by the affected people to the impacts they have experienced.

Qualitative data was analysed using a variety of analytical techniques such as content/theme analysis and analytic induction. Individual impact assessment data will be compiled to develop individual impact profiles.

This data is held by the NSW Department of Urban Affairs and Planning (Resource and Conservation Division), Sydney.

Community attitudes to forest in the region — methodology

Questionnaire design

The questionnaire was divided into five sections to investigate the five original aims of the report:

- demographic attributes of the respondents;
- employment details of the respondents;
- respondents opinions towards social and environmental issues;
- respondents current personal uses and desired future uses of forested land;
- the values respondents invest in forested land.

The questionnaire design consisted of four main phases, as follows:

- Comments submitted by members of the Social and Economic Technical Committee were collected and a brief literature review was carried out. Basic questions were considered and tested through a focus group interview session. The results of these three procedures were used to draft the base questionnaire which took the consultancy aims as its rationale for including or excluding questions.
- The base questionnaire was circulated amongst committee members for review and comments. A modified questionnaire was designed to incorporate the committee's comments.
- The modified questionnaire was recirculated amongst the committee and a meeting was held on 15 July 1997 where further changes were made.
- The final questionnaire covered standard demographic variables whilst investigating the economic, environmental and social dimensions of people's opinions about forest use and values.

Site selection

Whilst the Lower North East CRA region overlaps standard geographic units, postcode boundaries were found to be the most accurate method of delineating the Lower North East

region. Whilst there is some overlap with other regions it was not thought that this would alter the results of an attitudinal survey in any significant way.

The postcodes delineating the boundaries of the Lower North East sample are as follows:

2250, 2251, 2256, 2257, 2258, 2259, 2261, 2263, 2264, 2265, 2280, 2281, 2283, 2284, 2285, 2287, 2289, 2290, 2291, 2295, 2300, 2304, 2305, 2321, 2322, 2323, 2324, 2326, 2327, 2330, 2333, 2334, 2336, 2340, 2350, 2325, 2429, 2430, 2431, 2440, 2443, 2444, 2448, 2453, 2454, 2455.

Three hundred and eighty domestic telephone numbers were randomly selected using an electronic White Pages database from the postcodes comprising the Lower North East CRA region. Using 1991 census data this conformed to approximately one call to every 250 persons living in the Lower North East CRA region.

Interview procedure

Each interviewer was allocated a list of randomly generated phone numbers which they were to call between 6:00 pm and 9:00 pm on week nights and between 10:00 am and 9:00 pm on weekends. Phone calls were carried out between 17 July 1997 and 31 July 1997. If no-one answered the telephone at the first attempt, the phone number was called two more times with a minimum interval of two hours between the calls. If after the third call no-one answered, the call was considered a rejection.

If an answering machine was operating the interviewer read out a standardised statement informing members of the household about the objectives of the interview and indicated that the household would be called again in the next few days. No more messages were left on subsequent calls and the number was considered a rejection after three calls.

If the call was answered but the respondent did not wish to participate, interviewers asked whether it would be appropriate to call back at another time, or alternatively if anyone else in the household would be interested in participating. As asking other members of the house to participate potentially compromises the random selection criteria interviewers recorded the amount of respondents located through this technique.

The only criteria for successful phone calls was that the respondents be 17 years of age or over. For 'closed' questions interviewers were instructed to indicate on the questionnaire which of the selected options the respondent had chosen. For open-ended questions the interviewer recorded the response of the respondent by entering one of the preselected codes on the questionnaire sheet, or if the response did not fit any of these codes the response was written into the question sheet for later coding and analysis. If the respondent was unwilling to answer any of the questions they were not required or encouraged to do so.

Response rate

Of the 380 phone calls made to the Lower North East CRA region 111 successful interviews were carried out. This is a response rate of just over 29%. Very few contacts were made with secondary respondents and their responses were not thought to affect the results in any significant way.

Locational impacts of forest industry expenditure methodology

The approach adopted in this project closely followed that employed by Rush Social Research in its investigations of the local impacts of forest industry expenditure in the Eden region. The detailed description of and rationale for the approach is described elsewhere.¹ Here it is appropriate to state that the overall study is carried out as a two step procedure:

- step 1: involving a survey of timber mills and contractors and timber hauliers
- step 2: involving a survey of local suppliers to the timber mills, contractors and hauliers.

With regard to step 1, it is noted that the Lower North East region, relative to the Eden region, covers a very large area and includes very many more mills and contractors and hauliers. Consequently, face-to-face contact with all such businesses was not possible for the Lower North East. A sample of face-to-face interviews was achieved, and this was supplemented by a mail-out survey of the remainder.

This section outlines the method used in the survey of timber mills and contractors and hauliers. Details of the responses achieved and the consequences for the subsequent analysis, are also discussed.

It then details of the analysis of the survey of mills and contractors and hauliers.

The views of mill and contract company owners and managers, recorded in the series of face-to-face interviews, follow.

The approach to and results from the survey of local suppliers to the timber industry (step 2 above) are given after this.

The population of mills and contractors in the Lower North East

The primary database on mills and contractors used for the Lower North East project has been provided by NSW State Forests.

This database contains a variety of information, with records essentially based on the administrative requirement of the issuance of licences to carry out forest activities, such as milling. A number of mills have on-going relations with NSW State Forests. These mills are often the larger ones with log quotas from Crown land native forests. However many licence holders have smaller operations, involving non-quota salvage timber operations, and involving harvesting from private property either partly or wholly. These operations may involve only part-time or ad hoc work: a mill licence holder may be a farmer with a stand of trees on his or her own property. For such licence holders, use of the licence may be a sometime affair.

The timber industry in the Lower North East is in constant flux at the present time. Businesses are closing, or continuing with reduced staff, or amalgamating; and some are expanding. Businesses with valid licences may have wound up; amalgamated businesses may have changed names; staff numbers may have changed since the most recent industry survey.

¹ Rush Social Research. December 1997. *Local impacts of forest industry expenditure in the Eden CRA*, a research report to SAU/DPIE and RACAC/DUAP.

These changes make it difficult for any database operation to ensure that its records are completely up to date.

The final list for the Lower North East contained the names of about 130 mills, and of 32 contractors. A further independent process of editing attempted to cross-check these lists, so that as far as possible they represented the current situation of mills and contractors in the Lower North East. Although a small number of businesses listed were found to have closed, neither list was substantially changed.

Face-to-face interviews

From the lists of mills and contractors available, a selection was made of 23 businesses for face-to-face interviews. These businesses were seen as important for the project in terms of location and size. The interviews with the 23 businesses involved a wide ranging qualitative discussion of the timber industry within the region and the businesses' experiences over the past few years. Following this, the participants were asked to respond to a semi-structured questionnaire which covered the key topics with regards to locational impact. The questionnaire employed was developed by Rush Social Research and confirmed by the client.

In some cases the questionnaire was left on site, for later return to Rush Social Research. This enabled the questionnaire to be completed by the participant in his/her own time, since questions often covered data only available in annual reports or financial statements. The returned questionnaires were varyingly comprehensive in the information provided, and some were not returned at all.

The face-to-face interviews were conducted during the week of 10–14 August 1998, and consisted of:

- mill owners/managers — 18;
- contractors — 5;
- NSW State Forest regional representatives — 3.

Mail survey of remaining mills/contractors

The data collected and the comments from the businesses interviewed face-to-face focused attention on the content of a questionnaire that was to be mailed to all other known mills and contractors within the Lower North East. The content of this questionnaire was confirmed by the client. The mail survey was intended to provide a better geographical spread than was possible using the face-to-face method. Included in the mail-out was a return slip which could be used to indicate if that business had closed down.

Subsequently, to those of the larger mills who had not responded to the mail questionnaire, telephone calls were made from the Rush Social Research offices in Sydney reminding non-respondents of the questionnaire, and inviting their response and participation in the project. However, a poor response rate was achieved overall.

Modelling

A consultancy was carried out by Environmetrics Pty Ltd to provide a visual display of both baseline conditions and relative levels of impact of forest use options.

Using the preliminary list of social indicators, dynamic indicators of community and individual flexibility, community history and resilience were developed. Time is the dimension against which these dynamic indicators is displayed.

Survey data from forest occupational communities, collected in the social assessment phase is analysed statistically and spatially, primarily referencing residency by township.

Data sets of catchment areas were identified in relation to forest use with employment, education, retail use and other infrastructure sectors in case study communities.

The relationship between surveyed and census based employment, education and retail use patterns were used as a basis for analysing the relationship between key community indicators and land use and management options.

Qualitative data obtained from workshop data were given derived numerical values as follows.

A baseline of community history was derived from a cumulative ranking of significant events recorded from unprompted group recall at the workshops. In order to incorporate time and capacities of communities to recover, each year's accumulated stress variable was given a half life before being accumulated the next year. A graph of the communities recent history was obtained and the current year's total used in the modelling baseline for the current year.

A community's capacity to adapt to change was also given a derived numerical value. Analysis of the workshop data relating to the presented community narrative on past management of change, data was further ranked on the following scales:

- Was the signified event imposed or community initiated (0,1)?
- What was the range of interest groups involved in the nominated event (1–5)?
- Was the event nominated a natural disaster or not (1,0)?
- Were the stated objectives of the community response achieved (1–5)?

Responses to both positive and negative events were given different values, since some communities may have a greater capacity to cope with a positive event than a negative one. The resulting value represents a communities assessed capacity to adapt to change, or its resilience.

In addition, individual indices of personal and occupational flexibility of the hardwood workforce within case study communities was assessed and given an aggregate community value. That is, what is the capacity of the hardwood workforce in a potentially affected community to either relocate or find alternative employment appropriate to skills and experience.

3 POST IMPACT STUDIES ANALYSIS

The chapter provides a brief review of any social assessment studies conducted within the Lower North East comprehensive regional assessment area, in order to inform subsequent data collection and provide an understanding of the extent of the data which may currently be available. It will contribute an understanding of some of the current regional social change and trends and will also inform subsequent data collection

A literature search was undertaken to identify existing social assessment work within the Regional Forest Agreement region and studies of comparative communities that resemble the current impact context.

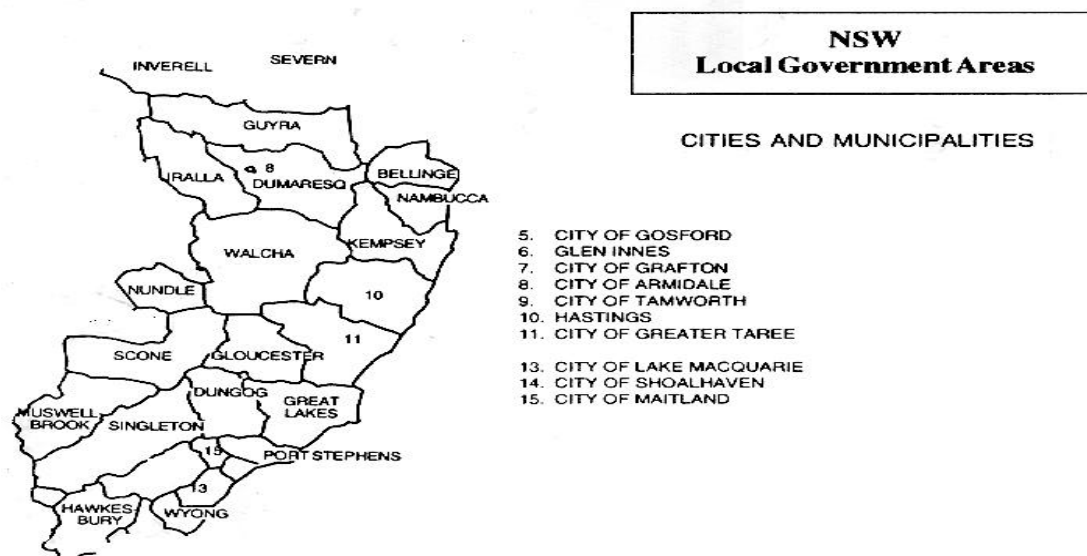
The steps that have been taken in the preparation of this chapter include:

- identification of relevant social science and resource-management databases on which to conduct literature searches, regionally, nationally and internationally;
- identification of relevant agencies, organisations or institutions that have conducted or are currently conducting work relating to the project within the Lower North East region; and
- collation and summary of relevant literature.

The Comprehensive Regional Assessment/Regional Forest Agreement region for the purposes of this study includes the following State Forest management areas:

- Coffs Harbour/Urunga
- Dorrigo
- Gloucester/Chichester
- Kempsey/Wauchope
- Morrisset
- Mt Royal
- Walcha Nundle/Styx River and Wingham.

The local government areas (LGAs) included in the study region, and described in detail in the regional profile, are illustrated below.



Forests and forest industry in the Lower North East region of New South Wales

The total land area of the Lower North East is approximately 5.8 million hectares, of which about 2.8 million hectares (or about 47%) is described as ‘forested’ by NSW State Forests. Included in this forested area are approximately 842 600 hectares of native hardwood forests on private land, 746 400 hectares of native forests of Crown land, and about 887 600 hectares of national parks and reserves (table 1).

Table 1: Land tenure of forested areas — Lower North East region

Tenure	Area (ha)	Percentage
State forest		
Native forest	746 400	27.1
Plantation (eucalypt & softwoods)	30 400	1.1
Other Crown native forests	245 800	8.9
National parks & reserves	887 600	32.2
Private forests		
Native	842 600	30.6
Plantation	4 600	0.2
Total	2 757 400	100.1

Source: NSW State Forests

Harvest from the resources of the Lower North East region include sawlogs, veneer logs, round timber, pulpwood, sleepers and fencing timber. These are taken both from Crown forested land and from private property in the region

In the initial scoping exercise of the social assessment for the Lower North East region, several communities were proposed for detailed case study assessment. In the course of that

investigation the following table was produced, which outlined some of the recent studies, which may also have pertinence to this post-impact analysis.

The major forestry changes which have precipitated recent social assessments of case study communities were:

- Environmental Impact Statements, State Forests (1985–1995);
- Deferred Forest Assessment (1995);
- Interim Forest Assessment (1996).

These communities of focus, priority according to the Regional Forest Forum and major findings are summarised in the table below.

Table 2: Forest related communities and recent social impact assessment

Town	Regional Forest Forum priority	Comment	SIAs
Gloucester	High	Major mill closed March 1998. Dairy factory dependent on mill residues. Major employment in sector.	EIS 1995*** ERM 1995* MR 1996**
Walcha	High	Small town. One large mill. Highly dependent on the timber industry	EIS 1995 MR 1996
Bulahdelah	High	Two major mills and several smaller mills. Recent mill closure. Major employment in sector	MR 1996
Kendall / Herons Creek	High	Small town. Large mill. Highly dependent on the timber industry	
Bowraville	High	Major mill lost to town several years ago — major effect on local employment	EIS 1995
Kempsey	Medium	Two major mills and numerous small mills. Strong historical association with timber industry	MR 1996
Wauchope	Medium	Medium sized town. No mills any more but many employees (contractors and State Forest employees) reside in the area.	MR 1996
Millfield	Medium	Small town, three mills. Sole employer in town.	EIS 1995
Stroud	Medium	Several medium sized mills in the area. Major employer in small rural town	EIS 1995
Dungog	Medium	Small mills in area. Strong historical association with timber industry. High level of contractor employment	EIS 1995
Wingham	Medium	Not dependent on industry. Some local employment in industry/forestry	
Urunga	Medium	Small town, no mills. Some local employment in industry/forestry. Not dependent	EIS 1995
Nundle	Low	Small town. Several mills, mostly private property. Pine forests as well as hardwood. Low to moderate employment in industry	EIS 1995
Bellingen	Low	Timber is relatively important to local employment. Many small-medium mills in outlying areas	EIS 1995

Karuah	Low	Medium sized mining timber business/mill. sources mainly off private property. Town not highly dependent
*	ERM Mitchell McCotter DFA 1995	
**	Manidis Roberts Interim Assessment 1996	
***	State Forests Environmental Impact Process	

Some trends in rural communities — social issues

In a study region the size of the Lower North East Comprehensive Regional Assessment, there is a spectrum in diversity of community. The region is one only for the purposes of the Regional Forest Agreement comprehensive assessment, rather than a discrete region for any other policy purpose, social -statistical purpose or in the popular mind (Walmsley 1990). This diversity of community includes:

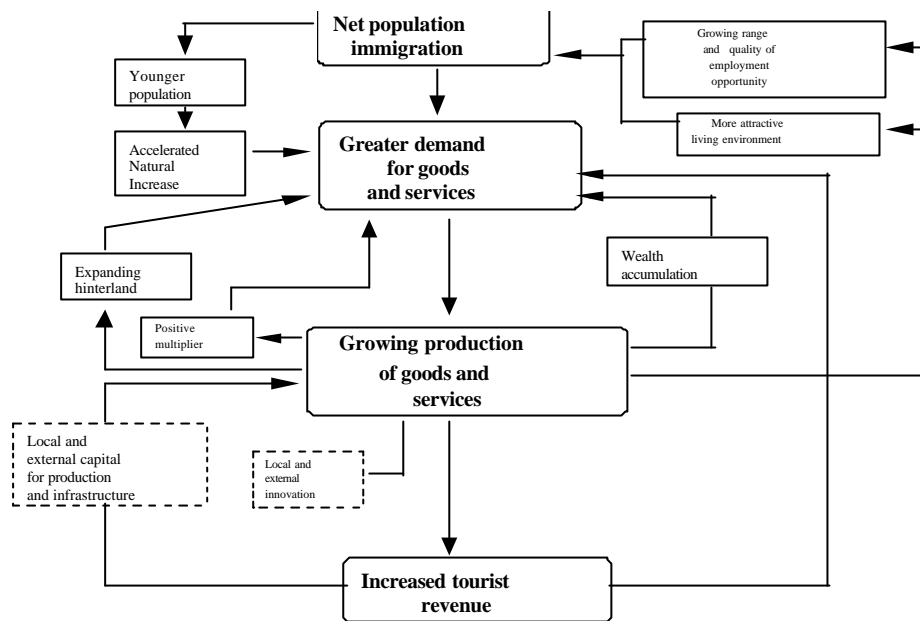
- all of the greater Newcastle region (large regional centre);
- the coastal towns and regional centres from Gosford to Urunga; and
- rural regions of the Singleton and Muswellbrook Shires in the south to Armidale and Uralla in the north.

Some of these communities will be in cycles of decline, others will be in a cycle of increase, as described by Sorenson (1990). Sorenson explores a common indicator of settlement prosperity as population expansion (or decline). This is based on the premise that a prosperous community with an increasing population will have:

- benefits of better and cheaper services;
- a wider range of jobs and salaries;
- a more modern and cost-efficient infrastructure; and
- easier access to capital.

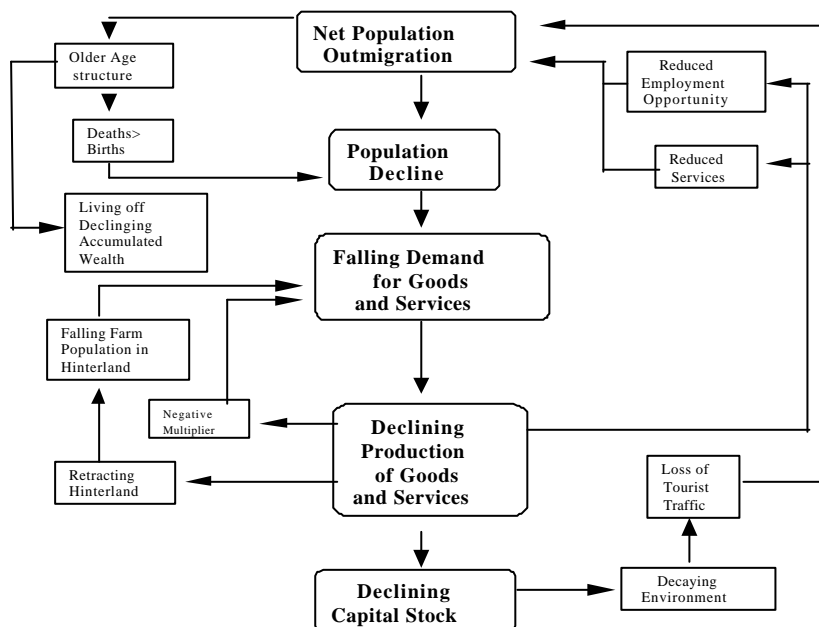
Sorenson's illustration of some of the characteristics of growth and decline in communities is replicated in the figures below (Walmsley 1990) and will assist in the modelling process to be used in the social impact assessment following the identification of forest-use options.

Figure: Virtuous cycle of settlement growth



Sorenson (1990)

Figure: Vicious cycle of settlement decline



Sorenson (1990)

Policy interest in rural communities ranges from descriptors of sentimentality to issues of equity of quality of life and well-being of a population. Such communities may have an established cultural heritage and rich levels of attachment to place. The definition of rural is offered by the deliberations of a rural social policy conference held in Dubbo, June 1995

‘rural communities: looking ahead’. This forum adopted the following inclusive definition of rural communities in New South Wales:

- regional centres outside of the major metropolitan area and including area adjacent to the centres of Newcastle and Wollongong;
- large and small towns and villages and rural Aboriginal communities;
- locations in which population density is low and which are generally dominated by primary production; and
- remote towns and regions lacking access to larger service centres.

The conference mapped four important trends occurring in rural New South Wales: demographic, economic, environmental and social.

Demographic changes

The conference issues paper challenged a widely held assumption that all rural areas are in decline. This is largely true for mining centres and small inland towns, which are predominantly losing populations to the regional centres.

Economic change

Most regions have followed the State and national trends with strong employment growth in the service sector while employment in the primary sector has remained static or has declined. However, if the one-third of farms which are considered non-viable in the long term, amalgamate, there are likely to be significant impacts on farming families and the communities.

Many small communities are struggling to retain existing businesses and attract new enterprises. This is combined with deteriorating infrastructure and the closure or relocation of government and private services. All these influences are having a significant negative impact, particularly on those inland locations where agriculture remains the dominant industry. (p. 2 Conference papers)

Unemployment rates and employment growth cannot be represented as a single trend across rural New South Wales, but Aboriginal unemployment (35%) is consistently higher than non-Aboriginal unemployment (11%).

Social change

A list of indicators is given to present evidence of increasing disadvantage relative to urban Australians. This list includes: life changes, material and social deprivation, poverty, low income levels, high prices, and the effect of some taxes and charges for public services such as telephone. The severity of certain health and housing problems in several Aboriginal communities continues. The ageing of farm owners, difficult transfer and intergenerational issues, difficulties faced with accessing educational and employment services which may lead to an increase flexibility and capacity to adapt to change at the personal level are additional factors. All the above-mentioned social factors are manifested in higher levels of stress-related illnesses, broken relationships and a high rate of youth suicide.

Environmental change

In the conference issues paper, the 1994 EPA study identified issues of environmental concern, showed there is a strong concern in rural New South Wales about the state of the environment, particularly the state of the rivers and creeks.

Based on these three trends, the conference identified three themes:

- promoting sustainable development;
- delivering more effective services;
- building stronger communities.

Change in rural communities

There is a large and growing body of recent sociological literature, which maps the issues of rural and regional decline in Australia. Some of this will be reviewed in order to find out if there are any of relevance to the situation of community and forest structural adjustment.

The indicators of interest include population decline, often depicted in Sorenson's (1990) socioeconomic system analysis of the cumulative effects of population decline.

At the policy level, there are increasing tensions between efficiency of service provision and equity considerations (McKenzie 1995) At the local level it is clear that service withdrawal is one of the most traumatic features of population decline. A recent examination, for example of the increasingly common occurrence of bank branch closures identified the symbolic and economic consequences of branch closure in a rural community.

Surveys identified that at the community level there were three main impacts:

- financial drain from the community;
- loss of financial investment; and
- loss of confidence in the community.

The study concluded that while 12% of respondents had increased their expenditure in the local town, 88% reported that their local expenditure had decreased. In addition, of those respondents who had applied for either business or housing loans before the bank closure, 30% were persuaded by the closure not to proceed.

The increasing volume of literature points to widespread concern about the loss of rural amenity and sustainable communities beyond the eastern seaboard. Recommendations include:

- an integrated approach to policy formulation;
- better partnerships between government business and community;
- planning for stages of growth and decline;
- building on different regional strengths;
- greater coordination between government agencies and non-government service providers; and
- fostering community leadership and innovation.

Focus of this study

In order to focus this report on the social environment in communities which may be affected by the current forest policy climate, a literature search including the communities identified previously was conducted to identify

- studies which describe social conditions in any of the case study communities (or identify other vulnerable communities in the region);
- studies which may enable the study of any social impacts of recent government forest policy decisions.

Recent policy changes affecting the New South Wales timber industry

The interim forestry assessment process

In 1992 the National Forest Policy Statement, agreed between the Commonwealth and State and Territory Governments, set out broad environmental and economic goals for the management of Australia's forests. The objectives of the National Forest Policy Statement are:

- to establish a national forest reserve system which is comprehensive, adequate and representative; and
- to provide a sustainable timber industry into the future.

To accomplish these objectives, the Commonwealth and State Governments together agreed to carry out Comprehensive Regional Assessments of the values of Australia's forest resources. These would be incorporated in formal agreements — Regional Forest Agreements (RFAs) — between the Commonwealth and the State Governments, and would provide the foundation for long-term decision-making in relation to individual forest regions.

In June 1995 the New South Wales Government announced a series of forestry reforms after extensive consultation with industry, union and conservation groups. The broad thrust of these reforms was towards the implementation of the National Forest Policy Statement within New South Wales. Subsequently the development of forests policy and the processes of Comprehensive Regional Assessments in New South Wales continued through the Interim Assessment Process. The Interim Assessment Process identified those areas that needed to be set aside to ensure a CAR forest reserve system, pending the outcome of the full scale assessment under the processes of the Regional Forest Agreements. The details of the Interim Assessment processes in New South Wales were set out in the RACAC publication *Draft Interim Forestry Assessment Report* (June 1996).

As part of the Interim Assessment Process the New South Wales Government made a decision to introduce reductions to quota log allocations from State Forests, to commence in July 1996. Generally speaking this action reduced quota log allocations by 40% to mills north of the Hunter River, using the July 1995 allocations to mills as the baseline. For those mills that retained 60% of quota allocations, most (83%) were allocated as five-year by five-year term agreements, and the remainder (17%) as three year annual agreements.

In addition, and as part of the Interim Assessment Process, the New South Wales Government is committed to a viable timber industry based on native forests in the future, and to ‘the promotion of value adding and technology advancement at all levels within the industry’.¹

A government response to forest industry structural adjustment: FISAP

In consideration of the impacts and potential impacts flowing from structural changes in the native hardwood timber industry in New South Wales, the State and Commonwealth Governments together committed \$120m over five years to a Forestry Industry Structural Adjustment Program (FISAP) aimed at helping individuals and businesses adjust to the changes. The key program has three major components:

- an ‘industry development assistance’ component, for those businesses wishing to invest in new value-adding processes in the industry;
- a ‘worker assistance’ component for retraining and re-skilling for jobs in the restructured timber industry, assistance in various forms, and redundancy payment as a last resort; and
- a ‘business exit assistance’ component, for those businesses wishing to leave the industry due to changes in timber supply arrangements.

The effects of these and other mitigation programs in the region are documented in a later chapter.

Post-impact studies identified

The following provides a precis of each of the studies identified, many of them through State Forests Environmental Impact Statements, the studies undertaken by the Commonwealth at a national level in the Deferred Forest Agreement process (DFA 1995) and the Interim Assessment Process (IAP 1996).

Gloucester

There have been three major participatory social assessments of the Gloucester community in 1995, 1996 and 1997. These are summarised below.

Social impacts of Deferred Forest Assessments, Gloucester Forest Region — NSW, ERM Mitchell McCotter (September 1995).

¹ Resource and Conservation Assessment Council, *Draft Interim Forestry Assessment Report*, NSW Government, Sydney, 1996, pp3-4.

Table 3: Summary of report

Main industries	<ul style="list-style-type: none"> ▪ Grazing (small family-operated businesses) ▪ Dairying (small family suppliers; ACF dairy factory (permanent employees = 29; casual staff = 12)) ▪ Forestry
Other industries	<ul style="list-style-type: none"> ▪ Recreation and tourism (infancy) ▪ Coal mine (15 years duration; 12 locals employed)
Structure of forest industries	<ul style="list-style-type: none"> ▪ Boral Timbers — Gloucester and Mt George Mills ▪ Betts Contracting (n = 26) ▪ Small-midsize family operated businesses
Employment statistics (Gloucester Forest region)	<ul style="list-style-type: none"> ▪ Fifteen mills in operation within the district (n = 169) ▪ Timber extraction (n = 4) ▪ Contract logging (n = 39) ▪ Forestry commission (n = 27) <p>Total employment = 239</p>
Inter-dependence of industries and vulnerability	<ul style="list-style-type: none"> ▪ Dairy industry (relies on timber industry for its power source) ▪ Retail business (dependent upon industry especially in relation to mechanical repairs, heavy engineering, tyres and batteries supplies, electrical repairs, fuel agents, chainsaw retailers and repairers, garages and clothing) ▪ Recreation and tourism (dependent upon adequate community infrastructure and stable population) ▪ Forest, transport and logging contractors (significant financial commitment) ▪ Services (population dependent) ▪ Economic multipliers income: 1.58 employment, forests: 2.32 employment, mills: 2.60 employment, administration: 1.80 jobs: 1.32 (every job in timber industry 1.32 jobs generated in the region)
Local economy impacts	<ul style="list-style-type: none"> ▪ Increased costs and timing problems for State Forests, logging and hauling contractors and for sawmills ▪ Costs in downtime, moving costs, inefficiency costs, lower production, uncertainty re future investment; and limited investment in the area
Employment impacts	<ul style="list-style-type: none"> ▪ Threats of reduction in forestry will mean downsizing and job loss ▪ Limited opportunities for re-employment
Individual and family impacts	<ul style="list-style-type: none"> ▪ Uncertainty ▪ Stress and worry (culture which doesn't use traditional welfare and social support services)
Community service provision impacts	<ul style="list-style-type: none"> ▪ Services dependent upon stable population — existing services may not be justified ▪ Difficulty in attracting new investment
Community vitality	<ul style="list-style-type: none"> ▪ Strong community vitality — further strengthening and involvement across the community ▪ Strong desire to remain in the community ▪ Strong support networks ▪ High involvement in community groups ▪ Pride in community is high

Summary	<ul style="list-style-type: none"> Community appears in a good position to overcome and deal with negative socioeconomic impacts Economic structure of the local communities is dependent upon forestry, is small and interrelated Although community has survived the impacts of decreasing forestry to date using various measures to sustain the industry, the cumulative impacts of permanent withdrawals of forest areas are likely to be felt throughout the interdependent economy especially in those sectors directly and closely related to the timber industry In terms of employment, re-employment of the workforce will be difficult and unemployment figures are already high. Workers have limited experience in other fields, limited skills and education and limited opportunity for transferability Extreme vulnerability of individuals and families in dealing with change. However family support is high, understanding within the community is strong Community services dependent upon population numbers Community services will be strained as need increased, spending power decreased and justification for continued provision decreased Community vitality is strong, pride in community is high, enthusiasm is strong, indicators reveal a healthy community
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Gloucester, Dungog, Stroud

Environmental Impact Statement

This report was written as part of the Environmental Impact Process for the management area and was based on a management proposal at that time (chapter 14 'Social Environment', State Forests of NSW December 1995).

Table 4: Summary of report

Study area	<ul style="list-style-type: none"> Gloucester LGA Dungog LGA Great Lakes LGA Scone LGA Muswellbrook LGA
Townships	<ul style="list-style-type: none"> Mainly Gloucester, Dungog, Stroud, Bulahdelah, Tea Gardens, Booral, Wards River
Main industries	<ul style="list-style-type: none"> Agriculture and forestry industries are important to all LGAs but in particular to Gloucester, Dungog and Scone Great Lakes has a significantly higher proportion of employees in recreation industries
Other industries	<ul style="list-style-type: none"> Community services Manufacturing Mining (Muswellbrook and Scone) Wholesale and retail

Structure of forest industries	<p>Gloucester</p> <ul style="list-style-type: none"> ▪ Boral main mill and some smaller mills ▪ Fenning Timbers has processing plant in Gloucester <p>Great Lakes LGA</p> <ul style="list-style-type: none"> ▪ AS Nichols and Sons Pty Ltd ▪ Yates Bros. Pty Ltd. ▪ GD Mackay's Mill ▪ Sawmillers Export Woodchip Mill <p>Dungog LGA</p> <ul style="list-style-type: none"> ▪ Boral at Maxwells Greek <p>Scone LGA</p> <ul style="list-style-type: none"> ▪ Aberdeen Sawmills (Salvage) <p>Muswellbrook</p> <ul style="list-style-type: none"> ▪ Upper Hunter Timbers
Employment statistics	<ul style="list-style-type: none"> ▪ 181 positions directly dependent on Management Area ▪ Gloucester LGA residents (n = 83) ▪ Dungog LGA residents (n = 24) ▪ Great Lakes LGA residents (n = 20) ▪ Muswellbrook LGA residents (n = 30) ▪ Scone LGA residents (n = 15)
Interdependence of industries and vulnerability	<ul style="list-style-type: none"> ▪ The dependence of Gloucester and Dungog on a narrow band of agriculture and forestry industries means local economies more vulnerable to economic fluctuations
Employment impacts	<ul style="list-style-type: none"> ▪ 30% reduction in quota = loss of 92 direct and indirect jobs ▪ Maximised conservation scenario = loss of 320 jobs ▪ Possible alternative employment in tourism, retirement industries, mining and NPWS, but substantial retraining required
Individual and family impacts	<ul style="list-style-type: none"> ▪ Not discussed but mention of reduced contact with family through moving
Community service provision impacts	<p>Possible impacts include (ERM Mitchell Report)</p> <ul style="list-style-type: none"> ▪ less choice in professional services e.g. doctors, lawyers, accountants ▪ rationalisation of existing health facilities ▪ decline in school services and possible closure ▪ further rationalisation of shopping facilities ▪ additional strain on community services ▪ decline in community organisations ▪ reduced public transport

Summary	<ul style="list-style-type: none"> ▪ If job decline continues it is likely there will be a gradual disintegration of fabric of community ▪ low morale and feeling of powerlessness ▪ due to narrow economic base the proposal could have severe impact on towns ▪ worst case scenario would see number of people unemployed increase by 50% ▪ real estate values will fall reducing business confidence ▪ towns most likely to suffer from resource reduction are those which are least attractive to new residents
Comment on report	<ul style="list-style-type: none"> ▪ report details demographics but does not establish thresholds for community services ▪ community vitality is not specifically discussed

Bulahdelah

NSW Interim Assessment, Forestry Social Impact Assessment Manidas Roberts Consultants April 1996.

Table 5: Summary of report

Scenario	Little impact from 30% reduction in sawlog quotas and the moratorium on old-growth forests. However coupled with State Forest reduction in sawlog production and government biodiversity policy (15% reservation) will mean all remaining productive areas removed from production
Local economy impacts	No increase in population size No indication of investment in town
Employment impacts	50% reduction in jobs — further job losses across town Bankruptcy of businesses Economic loss on equipment
Community service impacts	Adequate local public services, but these are under threat from public sector moves to regionalise and downsize Demand for rental housing is high with little availability Difficulty selling property — residential, commercial and industrial Community has largely generated social infrastructure itself Impacts will include a decline in social services and infrastructure (health, education) — risk of closure Decline in the people available to provide volunteer services: for example, bushfire brigade has declined by 10% Loss of State Forest contribution to town (community signs, contributions to the agricultural show, school curriculum, tree pruning around town) Closure sporting clubs Loss of doctor
Individual and family impacts	Extended families split as younger generations move away Risk of increased stress on individuals — manifesting as depression, crime and suicide Ageing population Increased boredom — increased drug abuse, family breakdown

Community vitality/ cohesion	<p>Loss of clarity of town's identity — loss of pioneer spirit as no longer a timber town</p> <p>Negative attitude towards the town as a place to live</p> <p>Community responds well to problems — unites to deal with crises and rallies around when needed</p> <p>High density social networks and high interrelationships between groups</p> <p>Widespread participation in community groups and social events/activities</p> <p>Thriving voluntary sector</p> <p>Town presented well — people have pride in community's appearance</p>
Community options	<p>No apparent vision as decisions seen to be imposed from the outside and community lacks information about issues and opportunities, sees itself as not involved in the decision making process. Pessimistic about outcomes/feel ineffectual</p> <p>Community believes that value-adding and relocation of some light-clean technology-based industry may help</p> <p>Positive outcomes include increased opportunity for community to pull together</p> <p>Pride in having a world class reserve system if properly managed, maintained and presented</p> <p>Minor opportunities for ecotourism (limited however due to the area not having pristine characteristics necessary for marketing and significant investment)</p>
Summary	<p>Devastation for local industry and thus the community. Will have a dramatic impact on an already vulnerable community which has low average income and limited opportunities</p>

Coffs Harbour and Urunga management area Environmental Impact Statement

This report was written as part of the Environmental Impact Statement for the management area and was based on a management proposal at that time (chapter 14 'Social Environment' and chapter 15 'Economic Environment', State Forests of NSW December 1995).

Table 6: Summary of report

Study area	<ul style="list-style-type: none"> ▪ Bellingen Shire LGA ▪ Coffs Harbour City LGA ▪ Nambucca Shire LGA ▪ Ulmarra Shire LGA
Townships	<ul style="list-style-type: none"> ▪ Macksville ▪ Coffs Harbour ▪ Sawtell ▪ Woolgoolga ▪ Ulmarra ▪ Bowraville ▪ Nambucca Heads ▪ Scotts Head
Main industries	<ul style="list-style-type: none"> ▪ Wholesale and retail trades 20.9% ▪ Agriculture, forestry and fishing 9.1% ▪ Recreation and personal services 10.8% ▪ Construction 7.6%
Other industries	<ul style="list-style-type: none"> ▪ Community services ▪ Manufacturing

Structure of forest industries	<ul style="list-style-type: none"> ▪ 46 sawmills: >45% employ 1–5, 7% employ over 20 people ▪ Briggs Mill and Boral Mill burnt down and not replaced ▪ No new mills between 1993 and 1995 ▪ Up to 20 000 bee hives per year ▪ Value of output of timber and timber products 1994–1995 = \$29.45 m
Employment statistics	<ul style="list-style-type: none"> ▪ Mills using State Forest resource (n = 228) ▪ Logging operations (n = 81) ▪ State Forests of NSW (n = 46) ▪ Total direct wages = \$7.83 million
Interdependence of industries and vulnerability	<p>Employment multipliers</p> <ul style="list-style-type: none"> ▪ 1.4 logging operations ▪ 1.6 sawmills ▪ 1.7 State Forests of NSW <p>Economic multipliers</p> <ul style="list-style-type: none"> ▪ 1.7 logging operations and sawmills ▪ 2 State Forests of NSW <p>Dependence of communities varies</p> <ul style="list-style-type: none"> ▪ Large centres such as Coffs Harbour and Nambucca less dependent ▪ Smaller villages more dependent and potential social impact more severe ▪ Social impacts of resource reduction will also affect Grafton and Kempsey outside area

Local economy impacts	<ul style="list-style-type: none"> ▪ Minimum limit assuming reduction of net harvestable area of 20% = (\$11.47 million) ▪ Maximum limit assuming no further reductions to harvestable area = +\$2.37 million ▪ No logging option = \$33.04 million <p>(all above based on NPV for 10 years @ 7%)</p>
Employment impacts	<ul style="list-style-type: none"> ▪ Under minimum limit scenario loss of 49 jobs ▪ If people remain in area may cause increase in overall unemployment ▪ Potential for alternative employment and job creation appears low
Individual and family impacts	<ul style="list-style-type: none"> ▪ Loss of self esteem and alienation from community for displaced workers ▪ Possible increase in alcohol and drug dependency and increased risk of domestic violence ▪ Current reluctance by banks to provide loans to timber industry workers
Community service provision impacts	<ul style="list-style-type: none"> ▪ In large towns impacts minimal ▪ In small villages and more dependent areas possible loss of some services including schools, banks and businesses which would reduce likelihood of further investment ▪ Reduction in community services may cause community morale to be affected
Community vitality	<ul style="list-style-type: none"> ▪ Not specifically mentioned though wide diversity of community organisations and social services ▪ Feeling of isolation and powerlessness in smaller timber dependent areas
Summary	<ul style="list-style-type: none"> ▪ Particular concern re smaller villages and more dependent areas within study area ▪ Economic structure of large coastal towns based more on tourism but significant small villages dependent upon forestry ▪ Possible outcome of resource reduction is migration from rural areas to larger centres ▪ Possible effect on age distribution with younger people migrating away ▪ Concern re impact of reduction on already higher than State average unemployment ▪ Loss of community services to smaller villages possible ▪ Feeling of isolation and powerlessness in small close-knit communities is likely to increase as a result of further supply reduction
Comment on report	<ul style="list-style-type: none"> ▪ The social assessment is fairly vague, does not assess in detail interdependence of economy or family/social units; also does not set up thresholds for survival of community services ▪ This report does not examine community vitality

Table 7: Summary of report

Main industries	Wholesale/retail (23%), community services (15.6%), manufacturing (13.3%)
Other industries	
Structure of forest industries	Plywood mill closed 1993 57 employees involved in hardwood extraction 24 mills in area, 209 employees total hardwood employment 266
Employment statistics	14.7%, 32.3% 15–19 year olds
Scenario	30% reduction in both wood and non-wood supply A further 25% cut likely in next 2–3 years 20% reduction in pulpwood Biodiversity requirements: 40–45% of district likely to be reserved
Local economy impacts	No significant economic growth No investment in the town Businesses moving to Port Macquarie Decline in population
Employment impacts	Loss of approx. 40 jobs in timber industry which will result in 140–160 job losses across the town Mill closure due April 1996 Increased unemployment
Individual and family impacts	Increase in personal and family stress Family breakdown Increase in depression Increase in petty crime Breakup of extended families Aging of community Loss of individuals prepared to take on leadership roles within the community
Community service impacts	Community infrastructure perceived as adequate to below par Health and service infrastructure is intact and not under threat at this point Residential, commercial, retail and industrial housing markets are slow and declining Strong rental market Increasing tendency to provide services and retail opportunities in Port Macquarie rather than the town Anticipated 30% reduction in resource will result in a decline in social services and infrastructure (health and education particularly)

Community vitality/ cohesion	<p>Sense of disillusionment</p> <p>Lack of control over situation</p> <p>Decrease in self-esteem</p> <p>Mixed response to how community faces challenges — strong collective action when crises are small and immediate, but community less able to deal with external threats of magnitude</p> <p>Density of networks is high as well as interrelationships between groups and associations</p> <p>Good level of support for community events</p> <p>Thriving voluntary sector and service organisations</p> <p>People have pride in the community — town is presented well</p> <p>Community feeling that it has to face one thing after another and that it is excluded from planning for its future. However feeling that this situation will bring the community together</p> <p>Community sees the need for more community action with regard to public meetings, lobbying of government, greater use of media, efforts to gain political representation</p>
Community options	<p>Vision of Wauchope as a timber town — capitalising on bush culture theme</p> <p>Stronger diversification into small businesses (need to develop a stronger identity)</p> <p>Hope to sustain the timber industry by using the whole log and value-adding approaches which will provide increase certainty for the industry</p> <p>Believe response to outcomes will be limited due to the cumulative effect</p>
Industry options	<p>To develop sustainable forest management practices</p> <p>To develop downstream processing and undertake relevant education and training</p> <p>Minor opportunities for nature-based tourism and related services</p> <p>Support for Timbertown</p>

Kempsey

Main industries	Wholesale/retail (22%), community services (17%), manufacturing (13.5%)
Other industries	Agricultural service centre
Structure of forest industries	14 mills employing 96 people 29 people employed in hardwood timber extraction
Employment statistics	17%, 40% 15–19 years
Scenario:	30% quota reduction
Local economy impacts	Little impact as Kempsey is a large town with adequate service provision currently However Kempsey is an already depressed community
Employment impacts	Between 40 and 200 jobs predicted to be lost in the area
Individual and family impacts	Increased stress on families due to prospective unemployment
Community service impacts	Some increase in need for counselling and welfare services
Community vitality/cohesion	Currently decreased capacity to cope with change
Community options	Considered a poor cousin to Coffs Harbour re tourism or regional economic development
Industry options	Increased value adding through FISAP assistance if resource levels are certain

Walcha

Main industries	Agriculture, forestry fishing (50%), wholesale/retail (10%), community services (10%)
Other industries	none
Structure of forest industries	16 mills employing 135 people 53 people associated with hardwood extraction
Employment statistics	8.2%
Scenario	30% quota reduction
Local economy impacts	Difficulty selling homes or commercial properties
Employment impacts	20–50 direct job losses
Individual and family impacts	Separation and single parent households have increased Loss of self-esteem and confidence
Community service impacts	Loss of business, commercial and professional services
Community vitality/cohesion	Community is experiencing helplessness, decline and decay
Community options	Telecottages, ?tourism
Industry options	Importing hardwood and softwood to enhance value adding

The methodologies for the studies outlined above are detailed in the respective studies, namely:

1. State Forests of NSW Environmental Assessment Branch, December 1994. *Guide to Socioeconomic Analysis in Forestry EISs*.
2. ERM Mitchell McCotter. September 1995. *Social impacts of Deferred Forest Assessments — a study for Department of Primary Industries and Energy, Gloucester Forest Region – NSW*.

3. Manidas Roberts Consultants. April 1996. *NSW Interim Assessment, Forestry Social Impact Assessment, Resource and Conservation Division, NSW Department of Urban Affairs and Planning.*

This latter report was specifically commissioned to pilot appropriate methods for the comprehensive regional assessment.

The methods used in this assessment drew on these reports, but specific changes suggested by key stakeholders in the Social and Economic Technical Committee were incorporated where possible. Final methods used at each stage of the assessment are outlined in 'Methodologies'.

Conclusion

The number of social assessment case studies at the community level presented above is indicative of the extent and persistence of recent change in forest-related communities. The detailed data will assist as baselines for the current studies. Many commonalities have been found in indicators used in the social assessment methodology over the studies documented here.

The most common scale of documented impact analysis is the community and will be the unit of reporting in the current studies. The current trends in those communities will be taken account of in any impact analysis. As Sorenson (1990) describes, communities experience cycles often created by triggers, such as changes in government policy:

The path to prosperity or nemesis is paved with other more place-specific trigger mechanisms: closure of a town's principal employer as occurred with the abattoirs at Tenterfield, Wallangarra; large scale investment in infrastructure (dam construction is typically the precursor to agriculture expansion which then benefits the local towns that provide goods and services (Moree being a case in point); the opening and closure of mines; the proclamation of national parks (the effect here could go either way depending whether or not tourism and recreation expansion, together with downstream jobs, outweighs the loss of employment in, say, the timber industry); and changes in the value of currency or prices received for farm output. On the coast another range of factors come into play including environmental attractiveness (and government policy to conserve it) and the investment plans of resort developers.
(Sorenson 1990)

As Sorenson notes, changes in forest management will not affect communities in the region uniformly. A contextual history, community-identified options and industry visions will be taken into account in social assessment. These assessments will provide a view which includes community perspectives, and the equity considerations compared to the State and regional characteristics.

4 REGIONAL PROFILE

The Lower North East study area extends from the Bellingen Local Government Area (LGA) in the north to the Gosford LGA in the south, and extends west to Scone LGA, Nundle LGA and Uralla LGA and north to Bellingen LGA. In 1996, the study area had a population of 989 201 people. The area encompasses 23 LGAs, which vary in both size and demographic character.

Overview

The Lower North East RFA forest area contains the LGAs of Armidale, Bellingen, Cessnock, Dumaresq, Dungog, Gloucester, Gosford, Great Lakes, Greater Taree, Hastings, Hawkesbury, Kempsey, Lake Macquarie, Maitland, Muswellbrook, Nambucca, Newcastle, Nundle, Port Stephens, Scone, Singleton, Uralla, Walcha and Wyong. Hawkesbury LGA has not been included in this regional profile.

The study area has the following features:

Population

The population of the Lower North East study area is quite homogenous with most of the population being Australian-born, Anglican, and English-speaking and living in separate houses.

Populations increased by an average of 5.11% between 1991 and 1996. The three LGAs, which experienced negative growth, were the inland LGAs of Armidale, Uralla and Walcha. Growth in the other LGAs ranged from 1.15% in Cessnock to 17.35% in Port Stephens, with the greatest areas of growth being in the coastal retirement and commuter belt.

In 1996, the Aboriginal and/or Torres Strait Islander community in the study area comprised 1.94% of the population (19 150 people). Aboriginal and/or Torres Strait Islander communities have grown over the intercensal period by around 1% in all LGAs in the Lower North East study area. This could be attributed at least in part to an increase in people identifying as Aboriginals and/or Torres Strait Islanders, and to an increase in the number of people responding to the census. The highest proportions of Aboriginals and/or Torres Strait Islanders in 1996 were found in the inland LGAs of Kempsey, Walcha, Armidale and Uralla.

The population is ageing at a fairly rapid rate. The median age in all LGAs except Wyong LGA, increased by two years or more over the intercensal period. The median age for the Lower North East study area in 1996 was 36 years compared to 34 years in New South Wales. In the 1996 census, 20.04% of the population was aged over 60 years compared with 16.5% of the New South Wales population.

In the 1996 census, 22.24% of the population was aged under 15 years compared with 21.3% of the New South Wales population.

Labour force

With the exception of the inland LGAs of Dumaresq, Dungog, Scone and Singleton, all the LGAs had unemployment rates equal to or higher than the New South Wales unemployment

rate of 8.82%. The unemployment rate in 13 out of 23 LGAs decreased in the intercensal period. The Lower North East unemployment rate of 11.8% was exceeded in 11 out of 23 LGAs in the study area. The highest unemployment rates were recorded in Kempsey, Nambucca, Hastings and Great Lakes LGAs. The three largest employment groups in the LGA are intermediate clerical, sales and service workers, professionals, and tradespersons and related workers. These occupational categories also dominate the employment profile in New South Wales.

In 1996, the largest category of the Lower North East study area workforce (19.06%) was that of workers aged between 35 and 44 years.

The largest employers in the study area were the wholesale and retail trade, manufacturing and health and community services. Manufacturing tends to be located around the larger populated areas and is focused on primary production related industries (such as abattoirs and food processing businesses). In New South Wales, the major employers were the wholesale and retail trade, manufacturing and property and business services.

The 1996 census records a total of 3312 people employed in the timber industry across the LGAs. This is an increase of 4.22% from 1991 when 3178 people were employed in the industry. The LGAs with the largest numbers of people employed in the industry in 1996 were Wyong, Gosford, Lake Macquarie, Greater Taree and Hastings. Those with the lowest were Dumaresq, Scone and Singleton.

The Lower North East study area has a lower labour force participation rate than the State as a whole, with a rate of 54.42% compared to 59.10% in New South Wales. This is likely to be influenced by the higher proportion of people over 60 years in the study area. The LGAs with the highest unemployment rates were Kempsey, Nambucca, Hastings and Great Lakes. Those with an unemployment rate below the New South Wales average were Dumaresq, Gosford, Singleton and Dungog.

Other characteristics

The study region has a similar educational participation rate to that of New South Wales at primary, secondary and post-secondary levels. 41.39% of the Lower North East population left school aged 15 years or less.

The dominant areas of qualification in the study area were classified by the ABS as engineering, business and administration, and health. About 5.08% of the study area's population hold tertiary qualifications compared with 8.49% of people in New South Wales.

The study area had a slightly lower median weekly household income than New South Wales, having a median of between \$500 and \$699 compared with New South Wales which had a median of \$652 per week. The median individual weekly income in New South Wales of \$298 per week fell within the median range for the Lower North East of \$200 to \$299. LGAs with the lowest individual incomes were Bellingen, Great Lakes, Kempsey, Nambucca and Nundle. The two LGAs with a median weekly income larger than the New South Wales average were Muswellbrook and Singleton. The levels for median family incomes generally corresponded with those for individual incomes.

In 1996, the Lower North East study area had a majority of monthly mortgage repayments within the range \$600 to \$799, considerably less than the median monthly mortgage for New

South Wales of \$906. While the New South Wales rate would have been affected by Sydney mortgage rates, it also reflects the low value of housing and the high proportion of home ownership in the study area. The median weekly rent for the study area was between \$100 and \$199 per week compared to the New South Wales median rent of \$142 per week.

Summary of characteristics in relation to forest use and management

LGA	Relationship between socio-demographic trends and forests
Armidale	<ul style="list-style-type: none"> Population decline of 0.23% a year Third highest Aboriginal and/or Torres Strait Islander population of Lower North East study area at 4.8% Lowest median age (27) and dependency ratio (31.95%) of Lower North East study area
Bellingen	<ul style="list-style-type: none"> Steady population growth of a little over 1% a year Third highest unemployment rate of LGAs at 18.6% Third lowest individual and household incomes High dependence on employment in the timber industry and a 12.65% decline in jobs in this industry between 1991 and 1996
Cessnock	<ul style="list-style-type: none"> Slow population growth of 0.23% a year Mid-range unemployment rate for Lower North East study area at 13.1% Median individual and household incomes well below State averages
Dumaresq	<ul style="list-style-type: none"> Very high proportion of people employed in primary industries Lowest numbers in timber industry of Lower North East study area Lowest unemployment rate (5.4%) of Lower North East study area but high youth unemployment
Dungog	<ul style="list-style-type: none"> Slow rate of population growth at less than 1% a year Low unemployment rate (8.6%) but high youth unemployment High proportion of population (20%) employed in primary industries
Gloucester	<ul style="list-style-type: none"> Slow growth rate, population relatively stable since 1950 High proportion of employment in primary industries and high dependency on timber industry for employment
Gosford	<ul style="list-style-type: none"> Very high growth rate, third highest in Lower North East study area at 2.5% a year High dependence on timber industry for employment with largest number of workers in LNE study area Low unemployment rate (8.8%) for Lower North East study area but same as State rate
Great Lakes	<ul style="list-style-type: none"> High growth rate at 2% a year Highest median age (44) and dependency ratio (43.96%) of all LGAs in study area Unemployment rate (15.4%), almost twice State rate Second lowest income levels, both individual and household in Lower North East study area

LGA	Relationship between socio-demographic trends and forests
Greater Taree	<ul style="list-style-type: none"> ▪ Medium growth rate at around 1% a year ▪ High dependence on timber industry for employment and 7% increase in jobs in industry between 1991 and 1996 ▪ High unemployment rate (14.2%), well above Lower North East average ▪ Low median individual incomes
Hastings	<ul style="list-style-type: none"> ▪ Very high population growth at over 3% a year, second highest of all LGAs in study area ▪ High unemployment rate (16.1%), well above State and Lower North East averages ▪ Low median individual incomes and high rents
Kempsey	<ul style="list-style-type: none"> ▪ Slow growth rate of just under 1% a year ▪ Highest unemployment of all LGAs in study area at 19.6% ▪ Highest Aboriginal and/or Torres Strait Islander population of all Lower North East study areas at 6.78% ▪ Large decline in employment in primary industries (8.6%) between 1991 and 1996 ▪ Very low median individual and household incomes
Lake Macquarie	<ul style="list-style-type: none"> ▪ Medium growth rate of over 1% a year ▪ Very low proportion of workers in primary industries at 0.63% ▪ Very high number of workers in the timber industry and a 12.9% increase between 1991 and 1996
Maitland	<ul style="list-style-type: none"> ▪ Steady growth rate at 1.27% a year ▪ Fourth lowest median age of LGAs in study area at 31 years ▪ Unemployment rate (10.5%) below Lower North East area but above State rate
Muswellbrook	<ul style="list-style-type: none"> ▪ Slow population growth at 0.5% a year ▪ Second lowest median age of Lower North East area at 31 ▪ Second highest median individual and household incomes, well above State medians
Nambucca	<ul style="list-style-type: none"> ▪ State forests cover 35% of LGA ▪ Second highest unemployment rate of study LGAs at 19.3% ▪ Lowest median individual and household incomes of all Lower North East study areas ▪ High proportion of Aboriginal and/or Torres Strait Islanders at 4.45% ▪ High median age at 39 (NSW 34) ▪ High dependence on the timber industry for employment and 27.68% loss of jobs in this industry between 1991 and 1996
Newcastle	<ul style="list-style-type: none"> ▪ Slow growth rate at 0.36% a year ▪ Lowest dependency on primary industries of all LGAs at 0.41% employment in these industries ▪ Lower median individual and household incomes than New South Wales ▪ High median rents and mortgage payments

LGA	Relationship between socio-demographic trends and forests
Nundle	<ul style="list-style-type: none"> ▪ Third highest median age (40) and high percentage decline in 15 to 30 age group ▪ High proportion of Aboriginal and/or Torres Strait Islanders at 3.66% ▪ High dependency on primary industries for employment with 43.56% employed in this category ▪ Very low median individual and household incomes
Port Stephens	<ul style="list-style-type: none"> ▪ Highest growth rate of all LGA study areas at 3.5% a year ▪ Average unemployment levels for LGAs in study area
Scone	<ul style="list-style-type: none"> ▪ Low growth rate at 0.3% a year ▪ Third lowest unemployment rate (7.7%) of LGAs in study area and below State rate ▪ High level of dependence on primary industries for employment but low dependence on the timber industry
Singleton	<ul style="list-style-type: none"> ▪ Slow growth rate at 0.3% a year ▪ Second lowest median age of LNE study area at 31 ▪ Second lowest unemployment rate at 6.8% and well below State average
Uralla	<ul style="list-style-type: none"> ▪ Slight decline in population ▪ High proportion of Aboriginal and/or Torres Strait Islanders (4.53%) ▪ High numbers employed in primary industries at 22.47% ▪ Low dependence on the timber industry, with 23 employees
Walcha	<ul style="list-style-type: none"> ▪ Major population decline of more than 2% a year ▪ High dependence on primary industries, employing 48.77% of the population ▪ 5.46% of labour force employed in timber industry ▪ Second highest proportion of Aboriginal and/or Torres Strait Islanders of all LGAs in study area at 5.14% ▪ An unemployment rate of 8.9%, close to State rate and lower than Lower North East study area
Wyong	<ul style="list-style-type: none"> ▪ Very high growth rate of over 3% a year ▪ High dependency ratio at 41.09% ▪ Large numbers of people employed in the timber industry and a 30% increase of employment in industry between 1991 and 1996 ▪ An unemployment rate of 12.5%, above the Lower North East rate (11.84%) ▪ Median individual and household incomes well below state medians ▪ Very high median rents and mortgage payments compared to Lower North East

Armidale LGA

Armidale LGA covers 34 square kilometres in the upper reaches of the Lower North East study area. The major population centre in the LGA is Armidale, with a population of 21 330.

The major industry in the LGA is education, with the University of New England being the principal educational institution. Rural industries include production of high grade fine wool, sheep studs, timber processing, dairying and production of stone fruit and potatoes. Tourism is also an important industry.

Armidale LGA is on the New England highway and has an airport at Armidale. The area includes the World Heritage listed New England National Park.

Population

The population of the Armidale LGA decreased by 245 between the 1991 and 1996 censuses to 21 330 people. In this period the median age for the LGA increased from 25 to 27 years and the number of people under 15 years declined by 84 people. Armidale LGA had the lowest median age of all LGAs in the study area, both in 1991 and 1996. The age structure chart for the Armidale LGA showed the LGA had a much higher proportion of people aged 15 to 24 than found in New South Wales and the Lower North East in both 1991 and 1996. This variation was between 4% and 8%. The chart also showed the LGA had a lower proportion of people aged over 30 years than found in the Lower North East or New South Wales in both 1991 and 1996. The 1996 dependency ratio in the LGA was 31.95.

In 1996 84.4% of the population was Australian-born and most were Anglican and English speaking. In the 1996 census, 1024 people were identified as being Aboriginal and/or Torres Strait Islanders, an increase of 190 from the 1991 census data.

Labour force

The 1996 census showed 1028 people were unemployed in a labour force of 8872, with an unemployment rate of 11.58%. The workforce participation rate was 53.5%.

In 1991, major industries recorded at the census in the LGA were classified by the ABS as: community services; the wholesale & retail trade; and recreational, personal and other services. Over one-third of employed people were employed in the community services sector which would have included education.

In 1996 the major industry was education, followed by wholesale and retail trade and health and community services. Education employed 1898 people — 24.21% of the employed population — whereas in the Lower North East study region and in New South Wales, the sector employed around 7% of the working population.

The timber industry in 1996 employed 62 people, 23 in forestry and logging, 18 in sawmilling and timber dressing and 21 in other wood product manufacturing. This was an increase from 1991 when 50 people were employed in the industry. The greatest changes in employment were in forestry and logging with an increase of 14 more people employed in this category. In 1991, nine people were employed in forestry and logging, 20 in sawmilling and timber dressing and 21 in other wood product manufacturing.

Professionals were the largest occupational group recorded at the 1996 census (1925) followed by intermediate clerical, sales and service workers (1345).

Most of the workforce was aged between 35 and 54 years and there were twice as many people aged between 15 and 19 years out of the workforce than in the workforce. At the 1996 census, 124 people over the age of 65 years were recorded in the workforce.

Median weekly individual income in the Armidale LGA in 1996 was \$262. Median weekly household income for the same period was between \$564.

Education

In 1996, 2175 attended primary schools and 1875 attended secondary schools, according to the census. This was an increase in primary school attendances from 1991 census data, which showed 2007, but a decrease in secondary school attendees (2066).

In 1991, 3903 people were recorded as having left school aged 15 years or less. This declined to 1973 people in 1996.

The numbers attending post-compulsory educational institutions declined over the intercensal period from 4640 people in 1991 to 4209 people in 1996. The number of people recorded having qualifications rose by 413 people from 6814 to 7227 people. The 1996 census showed 2829 people held tertiary qualifications. In both 1991 and 1996 census records, the ABS recorded society and culture as the area where the greatest number held qualifications, with business and administration, and education following in prominence.

Health

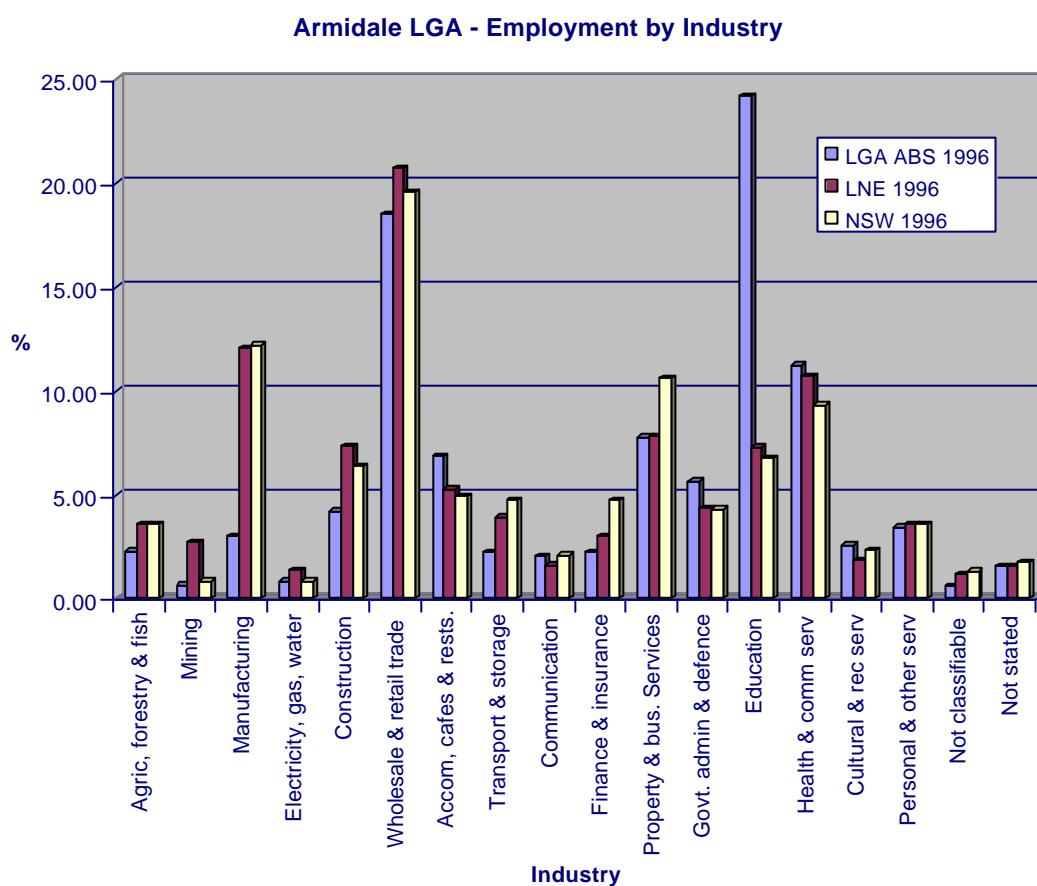
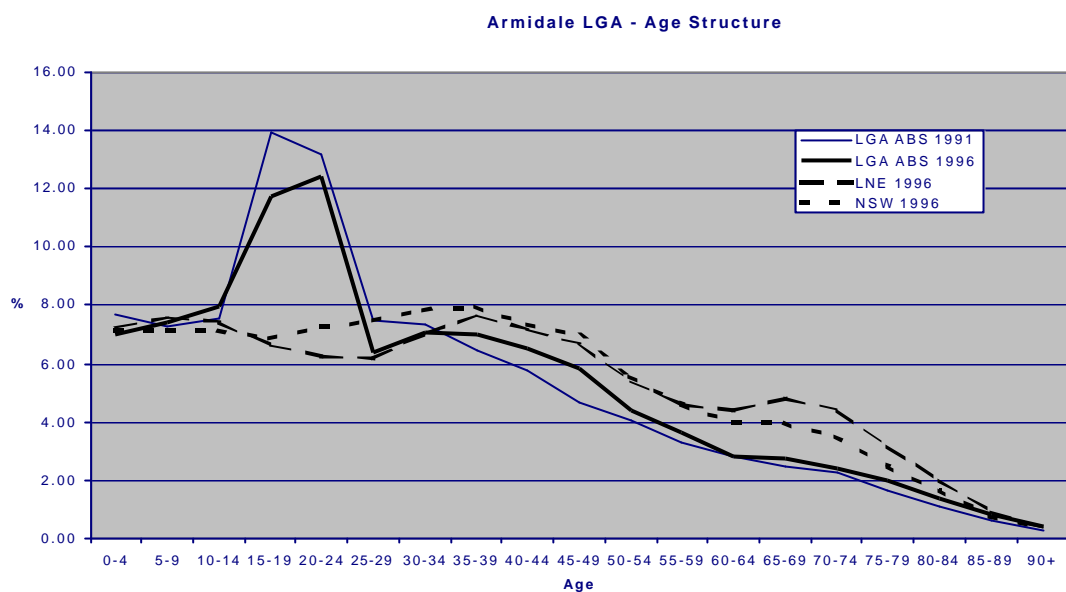
Armidale has a public district hospital, a private hospital and community health facilities. The public hospital has 90 beds and provides a range of services to the New England electorate. These include surgical and specialist services; an intensive care unit; 24 hour emergency care unit; paediatric and maternity unit; mental health; and ophthalmology services.

Co-located with the public hospital is Armidale Private Hospital, which also contracts services from the public hospital. This hospital has 32 beds, four day surgery beds, operating surgery facilities and a range of specialist doctors.

Housing

Separate houses were identified as the most popular occupied dwelling type at both the 1991 and 1996 census with the number of dwellings of this type increasing by 261 over the intercensal period. The number of unoccupied separate houses increased by 66 over the same period. The number of semi-detached and townhouses also increased in this period while flats and apartment numbers remained constant. The 1996 census showed 2386 dwellings were owned, 1395 dwellings were being purchased and 2761 dwellings were rented.

In 1996, the median housing loan repayment was \$780 a month and median rent was \$125 a week.



Bellingen LGA

Bellingen LGA covers 1601 square kilometres in the far northern reaches of the Lower North East study area. The major population centres in the LGA are Urunga, Bellingen, Dorrigo, and Mylestom. Forty per cent of Bellingen LGAs population lives in rural areas.

Major industries in the LGA include electrical engineering, dairying, pig farming, maize growing, logging and the production of maize and fruit. A more contemporary venture – Advanced Wind Technologies, which specialises in energy-producing windmills, can also be found in the LGA. The LGA includes good beaches, rainforests and spectacular scenery and has a tourism industry based on these features.

The LGA includes three protected areas, the Deer Vale Nature Reserve, the Dorrigo National Park, the Bongil Bongil National Park and the New England National Park. Over one-third of the LGA is covered by State forests and national parks.

The area has a railway station at Urunga and is linked to the Pacific highway. The nearest airport is at Coffs Harbour. Local bus transport caters only for shoppers and is supplemented by a community bus that operates one day a week.

The Dorrigo Escarpment (part of the Great Dividing Range) forms a natural barrier across the LGA. The road to Dorrigo is steep and winding and Dorrigo is a half hour drive from Bellingen; 27.56% of the LGA population lives on the plateau. It is necessary to travel into town and out again in order to get to one area of the plateau from another as roads radiate from Dorrigo township. The major effect of the geography is that it creates a need to have services spread across the LGA. People who have low incomes and or lack private transport are especially affected by the geography.

Population

The population of the Bellingen LGA increased by 601 between the 1991 and 1996 censuses, to 12 253 people. While there was an overall population growth in the LGA, Dorrigo township continued to lose population at an increasing rate. This also occurred on the rural plateau and Mylestom while Bellingen township and the rural valley showed strong growth. Repton and Urunga populations remained stable.

The median age for the LGA increased from 35 years in 1991 to 37 years in 1996. This was a similar age profile to the study area that has a median age of 36 years, but it was older than the New South Wales median of 34 years. The number of people less than 15 years increased by only 44 between 1991 and 1996. The Bellingen LGA age structure chart shows the LGA had a much lower youth population than New South Wales or the Lower North East as a whole (up to 3.5% less) and a higher proportion of people aged 55 to 69 years. The 1996 dependency ratio calculated by the ABS was 40.91%.

In 1996 86.6% of the population was Australian-born and most were Anglican and English speaking. There were 249 people (2.3%) identified as being Aboriginal and/or Torres Strait Islanders at the 1996 census, an increase of 99 people from the 1991 census data.

Labour force

The 1996 census showed 878 people were unemployed in a labour force of 4718, an unemployment rate of 18.6%. This unemployment rate is over 50% higher than that of New South Wales. The workforce participation rate was 51.4%.

In 1991, major industries recorded at the census in the LGA were classified by the ABS as community services, the wholesale and retail trade, and manufacturing.

In 1996, the largest industry in the LGA was wholesale and retail trade, followed by agriculture, forestry and fishing and manufacturing. The proportion employed in wholesale and retail trade was around 5% less than found in New South Wales and the Lower North East region. Agriculture, forestry and fishing comprised almost 13% of the workforce whereas approximately 4% of the workforces in the Lower North East and New South Wales were employed in this sector.

The timber industry in 1996 employed 221 people, 55 in forestry and logging, 131 in sawmilling and timber dressing and 35 in other wood product manufacturing. This was a decrease from 1991 when 253 people were employed in the industry.

Professionals were the largest occupational group recorded at the 1996 census (652 people), followed by managers and administrators (549) and tradespersons and related workers (510).

Most of the workforce was aged between 35 and 54 years and there were almost twice as many people out of the labour force as there were in the labour force in the 55 to 64 years and 15 to 19 years age categories. At the 1996 census, there were 125 people over the age of 65 years recorded in the workforce.

Median weekly individual income in the Bellingen LGA in 1996 was \$223. Median weekly household income for the same period was \$419. This compares to a New South Wales median individual income of \$336 and a median household income of \$660.

Education

The LGA has six public primary schools and four private primary schools as well as high schools at Dorrigo and Bellingen. Preschools service Dorrigo, Bellingen, Urunga and the Bellingen Valley.

In 1996, 1516 people attended primary schools and 974 attended secondary schools according to the census. This was an increase at both levels from 1991 census data which showed primary school attendances were 1443 and secondary attendances were 806.

In 1991, 1852 people were recorded as having left school aged 15 years or less. In 1996, this figure was recorded as 1850.

The number attending post-compulsory educational institutions increased over the intercensal period, from 382 people in 1991 to 417 in 1996. The number recorded as having qualifications rose by 489 people from 3209 to 3698 over the same period. The 1996 census showed 674 people held tertiary qualifications. In both the 1991 and 1996 census records, the ABS recorded engineering as the area where the greatest number held qualifications, with health being overtaken by business and administration, between the 1991 and 1996 censuses.

The Bellingen Shire Council noted in its 1998 community profile that funding cuts to Bellingen Enterprise Support Team in Bellingen township have severely limited the number of courses the organisation is able to offer unemployed people designed to improve their employment potential.

Health

There are hospitals at Dorrigo and Bellingen. Respite services, dementia day care and home care are amongst services available for the elderly. The LGA also has drug and alcohol counselling and assessment, baby health, community health, mental health counselling, sexual assault counselling, general counselling and women's health services, mostly located at Bellingen or provided as outreach services.

Demographic data from the ABS showed that in 1995 Bellingen population had a birth rate of 12.2 births per 1000 and a death rate of 6.8 deaths per 1000.

Housing

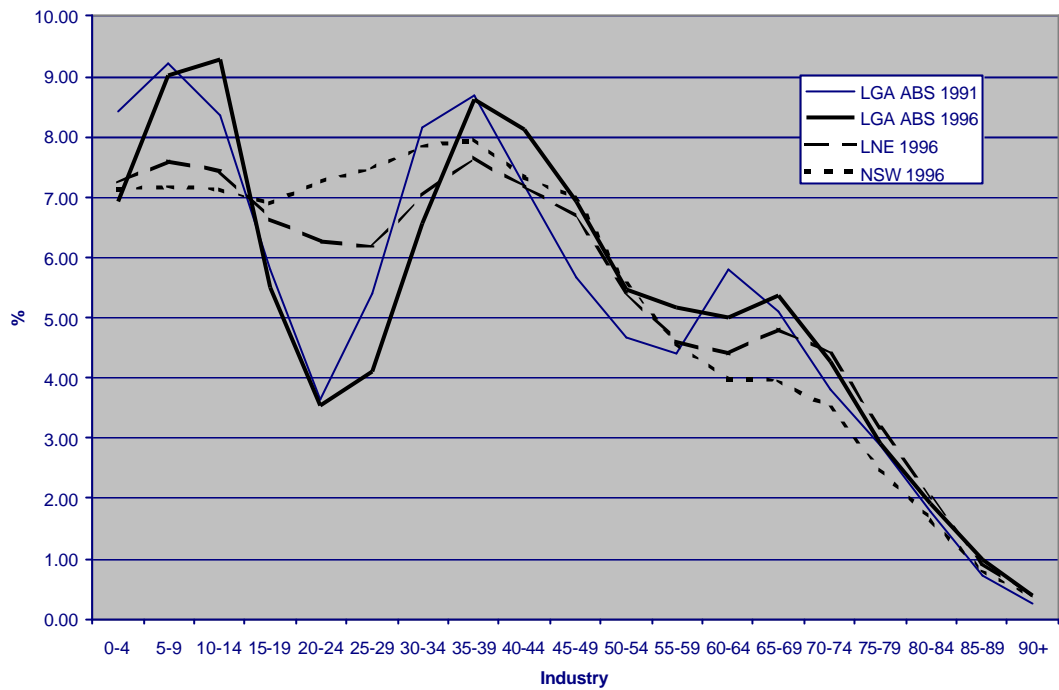
Separate houses were identified as the most popular occupied dwelling type at both the 1991 and 1996 censuses, with the number of dwellings of this type increasing by 461 over the intercensal period. The number of unoccupied separate houses increased by 54 over the same period. The number of semi-detached houses and townhouses increased over this period but the number of recorded flats or apartments decreased by 29 — possibly due to a change in ABS classification protocol rather than to a loss of actual structures.

The Bellingen Shire Council noted in its 1998 Community Profile that housing production has not kept pace with population growth since 1986. There is a trend towards a shift in population from Dorrigo and the Rural Plateau and Mystom, to Bellingen township and the Rural Valley. Demand for housing is unpredictable and waiting list figures fluctuate. Applicants often find alternative accommodation or move from the area. This may have implications for the provision of social services or the growing number of young people in the LGA and an ageing population.

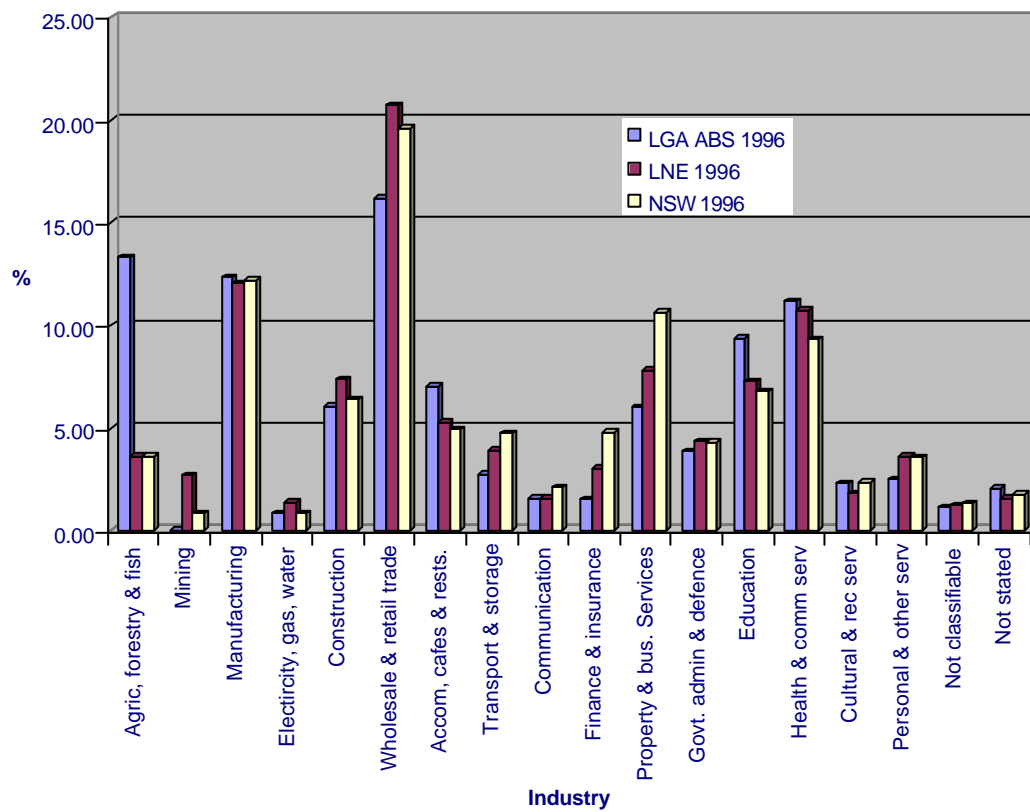
The 1996 census showed 2323 dwellings were owned, 867 dwellings were being purchased and 1021 dwellings were being rented.

In 1996, median housing repayment was \$629 per month and median rent was \$110 per week.

Bellingen LGA - Age Structure



Bellingen LGA - employment by Industry



Cessnock LGA

Cessnock LGA covers 1965 square kilometres in the south west of the Lower North East study area. The major population centres in the LGA are Cessnock, Bellbird, Kurri Kurri, Weston, Branxton, Greta, Heddon, Paxton, Ellalong, Millfield, Rothbury North, Neath, Kitchener and Mulbring.

Major industries contributing to the economy of the LGA include coal mining, the Alcan aluminium plant, clothing industries, light engineering, service industries and tourism. Viticulture, dairying, cattle breeding, timber milling, pottery, and harness and greyhound racing are also important industries. The economy is gradually changing from industrial to services based on hospitality in the vineyard districts.

The LGA includes Yengo National Park. The area has an airport at Cessnock and has links to the New England highway and the Sydney–Newcastle freeway.

Population

The population of the Cessnock LGA increased by 503 between the 1991 and 1996 censuses to 44 362 in 1996. The median age for the LGA increased from 32 years to the New South Wales median of 34 years, but is lower than the median for the study area (36). The number of people less than 15 years decreased by 483 between 1991 and 1996. The Cessnock LGA age structure chart shows the population within the LGA generally paralleled the populations of New South Wales and the Lower North East. Cessnock LGA has a slightly older youth population and a lower proportion of people aged 60 to 85 than found in the Lower North East study area. The 1996 dependency ratio calculated by the ABS was 36.14%.

In 1996, 89.9% of the population were Australian-born and most were of Anglican faith and were English speaking. At the 1996 census, 853 people identified as being Aboriginal and/or Torres Strait Islanders, an increase of 324 from the 1991 census data.

Labour force

The 1996 census showed 2370 people were unemployed in a labour force of 18 082, an unemployment rate of 13.1%. The workforce participation rate was 53.26%.

In 1991, major industries recorded at the census in the LGA were classified by the ABS as manufacturing, the wholesale and retail trade and community services.

In 1996, the largest industry in the Cessnock LGA was wholesale and retail trade, followed by manufacturing and mining. The proportion involved in manufacturing in the LGA was around 4% higher than in the Lower North East or New South Wales, whereas mining employed between 8 and 10% more than in the Lower North East and New South Wales.

The timber industry in 1996 employed 102 people, 30 in forestry and logging, 33 in sawmilling and timber dressing and 39 in other wood product manufacturing. This was an increase from 1991 when 95 people were employed in the industry. The greatest changes in employment were in other wood product manufacturing, with an increase of nine people in this category. In 1991, 30 people were employed in forestry and logging, 35 in sawmilling and timber dressing and 30 in other wood product manufacturing.

Tradespersons were the largest occupational group recorded at the 1996 census (2885 people), followed by intermediate production and transport workers (2831) and intermediate clerical, sales and service workers (2139).

Most of the labour force was aged between 35 and 54 years and there were twice as many people aged 55 to 64 out of the labour force than in the labour force. At the 1996 census, 175 people over the age of 65 years were recorded in the workforce.

Median weekly individual income in the Cessnock LGA in 1996 was \$251. Median weekly household income for the same period was \$545.

Education

In 1996, 4651 children attended primary schools and 3017 children attended secondary schools, according to the census. This was a decrease from 1991 when 4733 children attended primary school and 3035 children attended secondary school.

In 1991, 16 381 people were recorded as having left school aged 15 years or less. In 1996, this group was recorded as 15 676 people.

The number attending further educational institutions decreased over the intercensal period from 2150 people in 1991 to 1949 in 1996. The number recorded as having qualifications rose by 1080 people from 11 363 to 12 443 over the same period. The 1996 census showed 1068 people held tertiary qualifications. In both the 1991 and 1996 censuses, the ABS recorded engineering as the area where the greatest number held qualifications, with health being overtaken by business and administration between the 1991 and 1996 census.

Health

There are two hospitals in the LGA, located at Cessnock and Kurri Kurri. Community Health at both locations provides a comprehensive range of services.

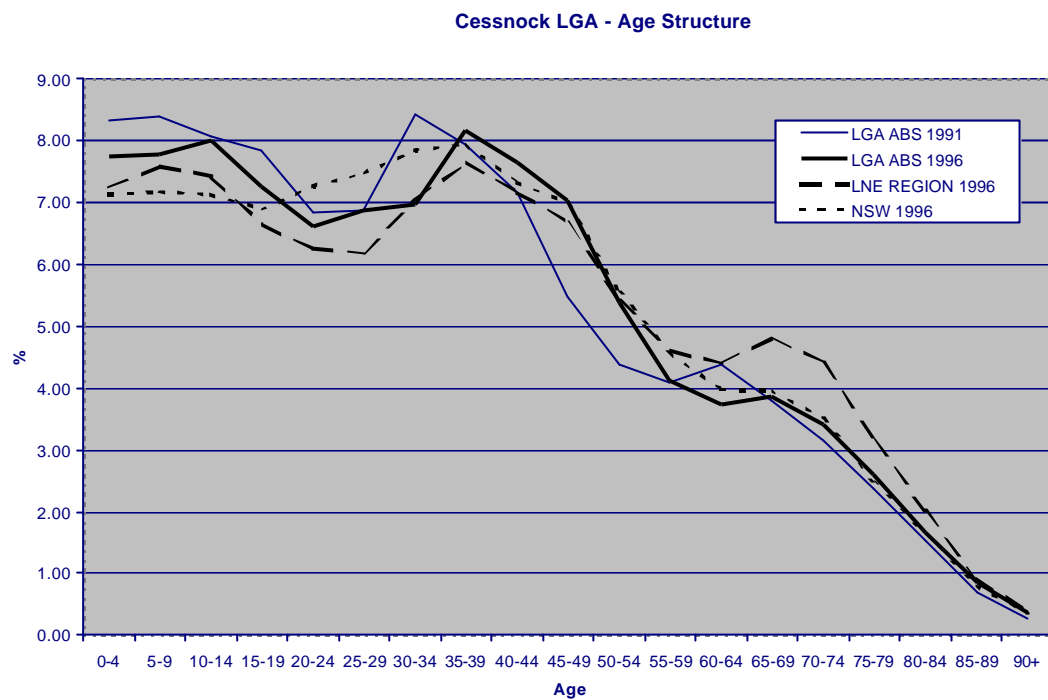
Cessnock hospital has 85 beds and 200 full-time equivalent staff. Services provided by the hospital include general surgery, obstetric and orthopaedic wards, and a 24 hour accident and emergency department. The hospital also provides allied health services such as dietetics, speech pathology, physiotherapy and X-rays.

The hospital at Kurri Kurri is a specialist rural centre for eye surgery and ears, nose and throat surgery. It has 41 beds, an acute care facility and medical ward, and provides general surgery and allied health services.

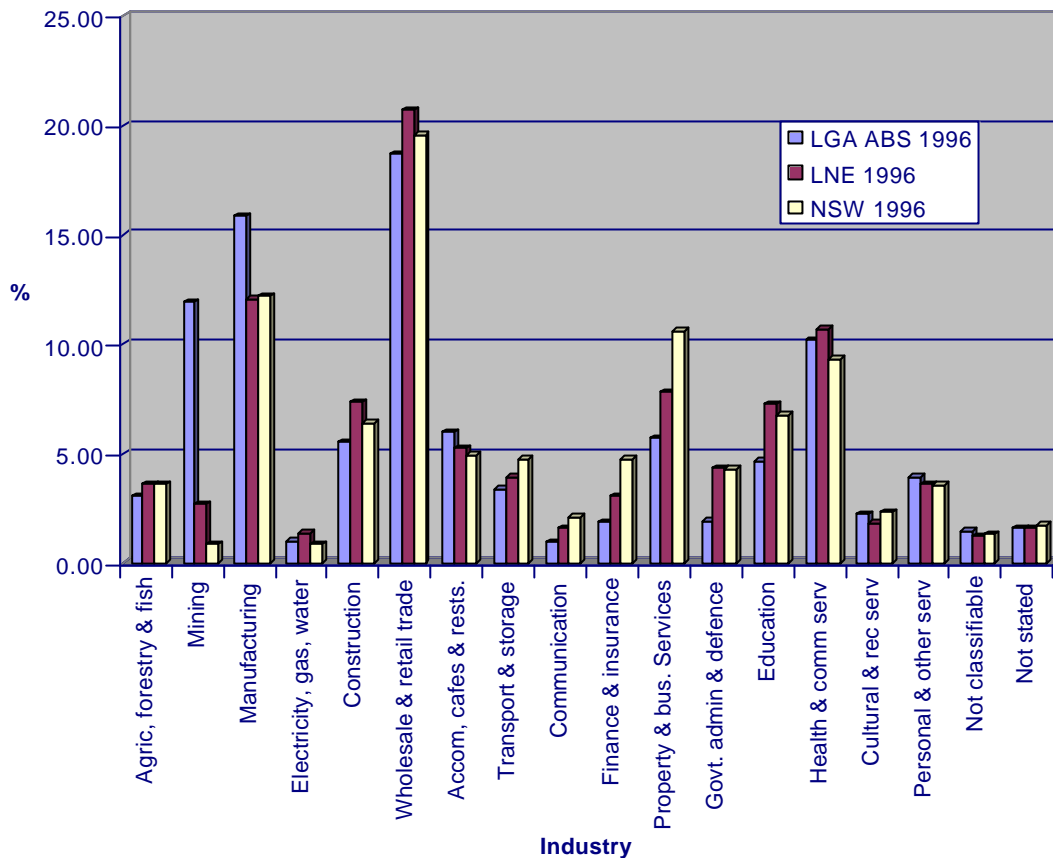
Housing

Separate houses were identified as the most popular occupied dwelling type at both the 1991 and 1996 censuses, with the number of dwellings of this type increasing by 914 over the intercensal period. The number of unoccupied separate houses increased by 276 over the same period. The number of semi-detached houses and townhouses, apartments and flats also increased.

The 1996 census showed 7970 dwellings were owned, 3891 dwellings were being purchased and 2964 dwellings were being rented. In 1996, median housing loan repayment was \$693 per month and median rent was \$110 per week.



Cessnock LGA - Employment by Industry



Dumaresq LGA

Dumaresq LGA covers 4193 square kilometres in the upper north region of the Lower North East study area. There are no major population centres in the LGA, but smaller localities include Argyle, Boorolong, Brooklyn, Dangarsleigh, Duval, Hillgrove, Palmerston, Rockvale, Stockton, Styx River and Wollomombi.

Major industries contributing to the economy of the LGA include wool production, cattle production and the Hillgrove mine. The area has some beautiful scenic areas and some very rugged terrain. The Wollombi Falls, Dangar Falls and the Blue Hole are major tourist attractions.

The LGA includes Cathedral Rock National Park, Georges Creek Nature Reserve, Oxley Wild Rivers National Park, Serpentine National Park and the Castles Flora Reserves. The closest airport is at Armidale and the LGA has links to the New England highway.

Population

The population of the Dumaresq LGA increased by 76 between the 1991 and 1996 censuses to 3835 people in 1996. The median age for the LGA increased from 32 to 36 years in 1996,

which is higher than the New South Wales median of 34 years, and equal to the median for the study area. The number of people less than 15 years increased by 10 between 1991 and 1996. While the Dumaresq LGA age structure chart shows the population generally follows the trend for New South Wales and the Lower North East region populations, Dumaresq LGA has a youth population around 2% higher than these populations, about 2% fewer people aged 25 to 29 and an increasing number of people in the 40 to 44 year age group. The 1996 dependency ratio calculated by the ABS was 34.70%.

In 1996, 89.8% of the population were Australian-born and most were of Anglican faith and English speaking. At the 1996 census 48 people identified as being Aboriginal and/or Torres Strait Islanders, an increase of 20 people from the 1991 census data and representing 1.25% of the population.

Labour force

The 1996 census showed 106 people were unemployed in a labour force of 1962 people with an unemployment rate of 5.4%, the lowest in the study area. The workforce participation rate was 67.96%, the highest in the study area.

In 1991, major industries of employment in the LGA recorded at the census were classified by the ABS as agriculture, forestry, fishing and hunting, the community services and wholesale and retail trade. Agriculture, forestry, fishing and hunting represented 30.4% of the employed population.

Agriculture, forestry and fishing was the dominant industry category of employment in the study area in 1996, employing around 27% of the workforce compared to around 4% of the workforce in the Lower North East and in New South Wales. Education and wholesale and retail trades were also large employers in the LGA.

The timber industry in 1996 employed 11 people, 5 in forestry and logging, none in sawmilling and timber dressing and 6 in other wood product manufacturing. This was an increase from 1991 when 8 people were employed in the industry. The greatest changes in employment were in forestry and logging, with an increase of 5 people employed in this category. In 1991 no people were employed in forestry and logging, 3 in sawmilling and timber dressing and 5 in other wood product manufacturing.

Managers and administrators were the largest occupational group recorded at the 1996 census (484 people), followed by professionals (391) and intermediate production and transport workers (208).

Most of the labour force was aged between 35 and 54 years and there were almost twice as many people aged 15 to 19 out of the labour force than in the labour force. At the 1996 census, 115 people over the age of 65 years were recorded in the workforce.

Median weekly individual income in the Dumaresq LGA in 1996 was \$336. Median weekly household income for the same period was \$649.

Education

The census showed 460 children attended primary schools and 367 children attended secondary schools in 1996. This was an increase from 1991 when 437 children attended primary school and 352 children attended secondary school.

In 1991, 812 people were recorded as having left school aged 15 years or less. In 1996, this group was recorded as 698 people.

The number attending further educational institutions decreased over the intercensal period from 323 people in 1991 to 258 in 1996. The number recorded as having qualifications rose by 140 people from 1340 to 1480 over the same period. The 1996 census showed 512 people held tertiary qualifications. In both the 1991 and 1996 censuses, the ABS recorded engineering as the area where the greatest number held qualifications, business and administration was second in the 1991 census and society and culture second in the 1996 census.

Health

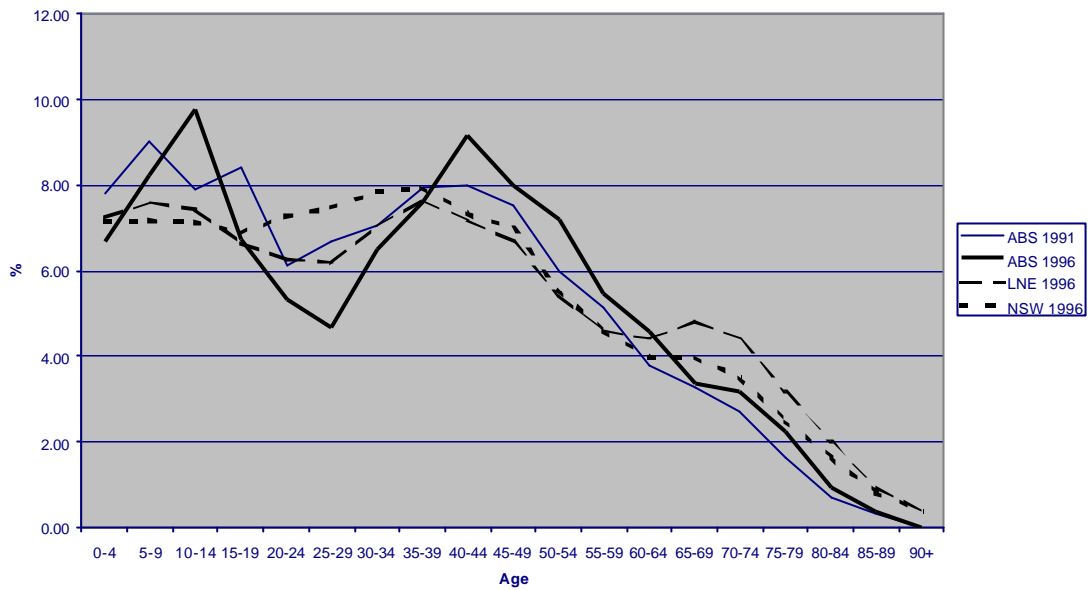
Dumaresq LGA, having no major settlements, has no health services. Residents of the shire would use health facilities in Armidale, their nearest larger town.

Housing

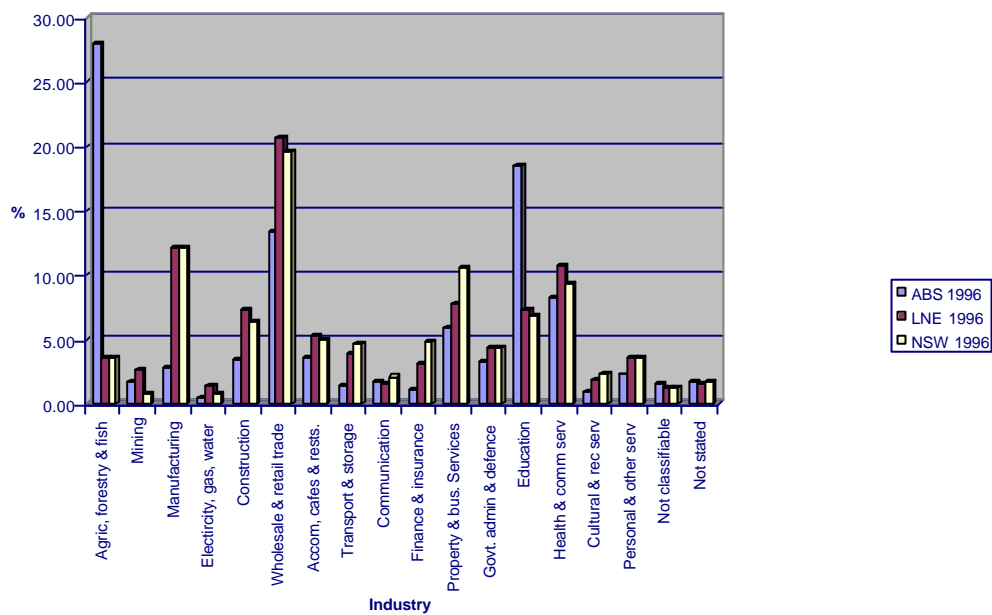
Separate houses were identified as the most popular occupied dwelling type at both the 1991 and 1996 censuses, with the number of dwellings of this type increasing by 103 over the intercensal period. The number of unoccupied separate houses increased by four over the same period. While there were six semi-detached dwellings and townhouses recorded at the 1991 census, there were none recorded at the 1996 census. This could have been due to changes in dwelling classification.

The 1996 census showed 699 dwellings were owned, 237 dwellings were being purchased and 245 dwellings were being rented. In 1996, median housing loan repayment was \$853 per month and median rent was \$60 per week. The average household size in 1996 was 2.9 people, the highest in the study area.

Dumaresq LGA - Age Structure



Dumaresq LGA - Employment by Industry



Dungog LGA

Dungog LGA covers 2250 square kilometres in the central region of the Lower North East study area. The major population centres in the LGA include Dungog, Clarence Town, Paterson, Gresford East and Gresford West.

Major industries contributing to the economy of the LGA include dairying, grazing and timber cutting and to a lesser extent poultry and deer farming, hydroponics and tourism.

The area includes the Barrington Tops National Park. There is no airport in the LGA and the LGA is not directly linked to major highways.

Population

The population of the Dungog LGA increased by 294 between the 1991 and 1996 censuses to 7658 people in 1996. The median age for the LGA increased from 34 years to 36 years in 1996, higher than the NSW median (34), and equal to the median for the study area (36). The number of people less than 15 years increased by 23 between 1991 and 1996. The Dungog LGA age structure chart shows the population aged 20 to 24 years was about 2% lower than in either New South Wales or the Lower North East study area — suggesting an exodus to employment and educational opportunities. The LGA also had around 1% more people aged 55 to 59 years and around 2% more aged 5 to 9 years. The 1996 dependency ratio calculated by the ABS was 37.61%.

In 1996, 92.5% of the population were Australian-born and most were of Anglican faith and English-speaking. At the 1996 census, 140 people identified as Aboriginal and/or Torres Strait Islanders, an increase of 96 people, and three times the population of the 1991 census data. This population comprises 0.6% of Dungog LGA, which shares the lowest proportion of this group in the study area.

Labour force

The 1996 census showed 290 were unemployed in a labour force of 3337 people, an unemployment rate of 8.7%. The workforce participation rate was 57.48%.

In 1991, major industries of employment in the LGA recorded at the census were classified by the ABS as agriculture, forestry, fishing and hunting; community services; and wholesale and retail trade. Agriculture, forestry, fishing and hunting employed 20.0% of the employed population.

In 1996, the dominant industry of employment remained agriculture, forestry and fishing but wholesale and retail trade increased its profile and manufacturing became third largest employer. Agriculture, forestry and fishing employed 17.56% of the labour force.

The timber industry in 1996 employed 75 people, 20 in forestry and logging, 42 in sawmilling and timber dressing and 13 in other wood product manufacturing. This was a decrease from 1991 when 77 people were employed in the industry. In 1991, 24 people were employed in forestry and logging, 44 in sawmilling and timber dressing and 9 in other wood product manufacturing.

Managers and administrators were the largest occupational group recorded at the 1996 census (543 people), followed by professionals (395) and labourers and related workers (375).

Most of the labour force was aged between 35 and 54 years and there were almost twice as many people aged 15 to 19 out of the labour force than in the labour force and almost equal numbers in each category for people aged 55 to 64 years. At the 1996 census, 123 people over the age of 65 years were recorded in the workforce.

Median weekly individual income in the Dungog LGA in 1996 was \$264. Median weekly household income for the same period was \$544.

Education

The census showed 934 children attended primary schools and 544 children attended secondary schools in 1996. This was an increase from 1991 when 816 children attended primary school and 541 children attended secondary school.

In 1991, 2607 people were recorded as having left school aged 15 years or less. In 1996, this group was recorded as 2538 people.

The number attending further educational institutions decreased over the intercensal period from 294 people in 1991 to 278 in 1996. The number recorded as having qualifications rose by 235 people from 2038 to 2273 over the same period. The 1996 census showed 348 people held tertiary qualifications. In both the 1991 and 1996 censuses, the ABS recorded engineering as the area where the greatest number held qualifications, business and administration and health were next in both 1991 and 1996.

Health

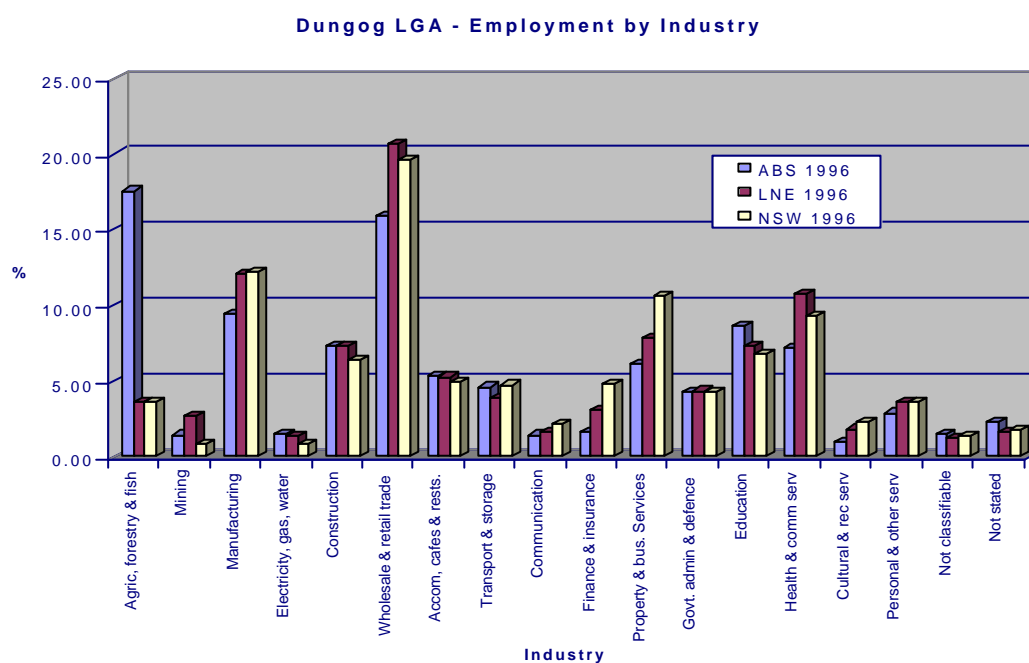
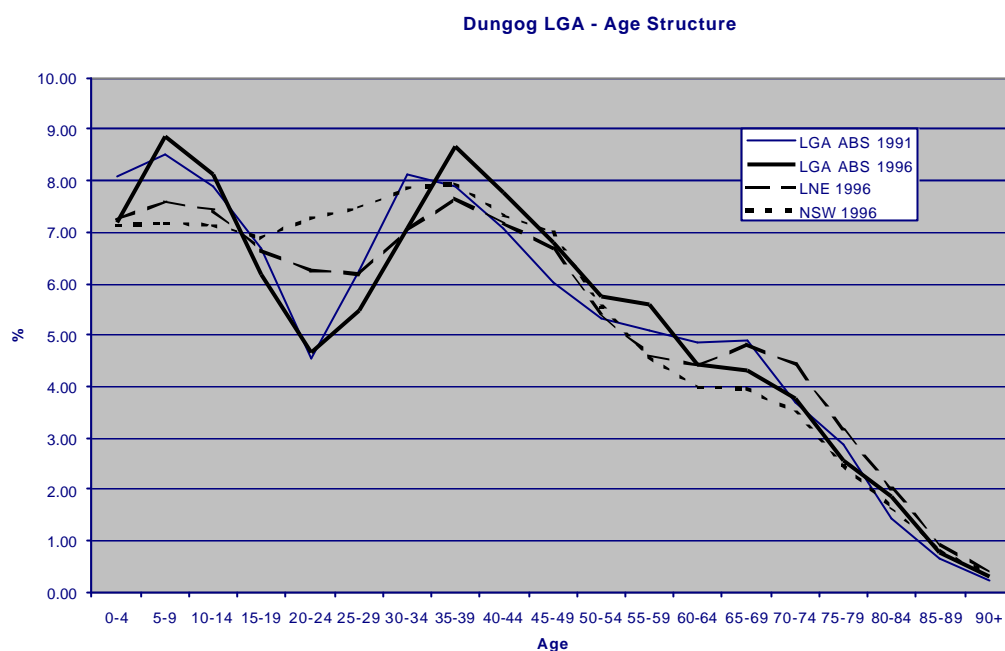
Dungog has a hospital and community health services, a weekly early childhood clinic, and two pharmacies, two doctors and an ambulance station. The hospital, which has 15 beds, services the LGA and areas beyond. Services provided by the hospital include diagnostic and medical, as well as 24-hour accident and emergency and in-patient care. The community health services are provided by the hospital on a part-time basis, with the exception of the community nurse who is available full-time. Community health services and an early childhood clinic are also available in Gresford and Paterson.

Housing

Separate houses were identified as the most popular occupied dwelling type at both the 1991 and 1996 censuses, with the number of dwellings of this type increasing by 146 over the intercensal period. The number of unoccupied separate houses decreased by 25 over the same period. The number of semi-detached dwellings and townhouses, apartments and flats also increased.

The 1996 census showed 1453 dwellings were owned, 646 dwellings were being purchased and 4394 dwellings were being rented. In 1996, the median housing loan repayment was \$693 per month and median rent was \$95 per week.

The average household size in 1996 was 2.7 people.



Gloucester LGA

Gloucester LGA covers 2949 square kilometres in the central region of the Lower North East study area. There is only one major population centre in the LGA, Gloucester, but smaller localities include Barrington, Bindera, Copeland, Craven, Forbesdale, Maudville, Myra, Stratford, Tibbuc and Wallanbah.

Major industries contributing to the economy of the LGA include timber cutting, dairying, beef cattle grazing and tourism based around outdoor pursuits.

The area includes the Barrington Tops National Park, Camels Hump Nature Reserve and the Woko National Park. There is no airport in the LGA and the LGA is not directly linked to major highways.

Population

The population of the Gloucester LGA increased by 158 between the 1991 and 1996 censuses to 4816 people in 1996. The median age for the LGA increased from 37 to 38 years in 1996, higher than the New South Wales median (34) and the median for the study area (36). The number of people less than 15 years increased by two between 1991 and 1996. The Gloucester LGA age structure chart shows the age profile generally follows that of the Lower North East and New South Wales, but has a much lower proportion of people aged 20 to 24 years than found in New South Wales (around 1.5%). The 1996 dependency ratio calculated by the ABS was 39.67%.

In 1996, 90.6% of the population were Australian-born and most were of Anglican faith and English-speaking. At the 1996 census, 101 people identified as Aboriginal and/or Torres Strait Islanders, an increase of 44 people from the 1991 census data, and representing 2.10% of the population.

Labour force

The 1996 census showed 196 people were unemployed in a labour force of 2025, an unemployment rate of 9.7%. The workforce participation rate was 54.43%.

In 1991, major industries in the LGA recorded at the census were classified by the ABS as agriculture, forestry, fishing and hunting; wholesale and retail trade; and community services. Agriculture, forestry, fishing and hunting employed 24.8% of the employed population.

In 1996, agriculture, forestry and fishing continued to be the dominant industry of employment followed by wholesale and retail trade, but manufacturing increased its profile as an employer, overtaking community services for third ranked industry. With 22.86% of the labour force, agriculture, forestry and fishing had six times more people proportionally in this sector than there were in either New South Wales or the Lower North East.

The timber industry in 1996 employed 126 people, 35 in forestry and logging, 87 in sawmilling and timber dressing and four in other wood product manufacturing. This was a decrease from 1991 when 145 people were employed in the industry. The greatest changes in employment were in sawmilling and timber dressing, with a decrease of 23 people employed in this category. In 1991 35 people were employed in forestry and logging, 110 in sawmilling and timber dressing and none in other wood product manufacturing.

Managers and administrators were the largest occupational group recorded at the 1996 census (411 people), followed by intermediate clerical, sales and production workers (217) and intermediate production and transport workers (213).

Most of the labour force was aged between 35 and 54 years and there were almost equal numbers in the workforce and out of the workforce aged 55 to 64 years and 15 to 19 years. At the 1996 census, 99 people over the age of 65 years were recorded in the workforce.

Median weekly individual income in the Gloucester LGA in 1996 was \$248. Median weekly household income for the same period was \$475.

Education

The census showed 503 children attended primary schools and 377 children attended secondary schools in 1996. There was a decrease in enrolments from 1991 for primary schools when 526 children attended and an increase for secondary schools when 330 children attended.

In 1991, 1716 people were recorded as having left school aged 15 years or less. In 1996, there were 1752 in this group.

The number attending further educational institutions decreased over the intercensal period from 97 people in 1991 to 62 in 1996. The number recorded as having qualifications rose by 164 people from 1133 to 1297 over the same period. The 1996 census showed 194 people held tertiary qualifications. In both the 1991 and 1996 censuses, the ABS recorded engineering as the area where the greatest number held qualifications. Health and business and administration were next in both 1991 and 1996.

Health

Gloucester has a range of health services including a hospital, community health service, ambulance service, four doctors, visiting surgeon, a pharmacy and a dentist.

The hospital has 18 acute beds, two maternity/obstetric and 15 long stay geriatric beds. The hospital has a 24-hour accident and emergency service, and an operating theatre for general and ophthalmic surgery. In the grounds of the hospital are a 25-bed nursing home, a 20-bed hostel and a community health service.

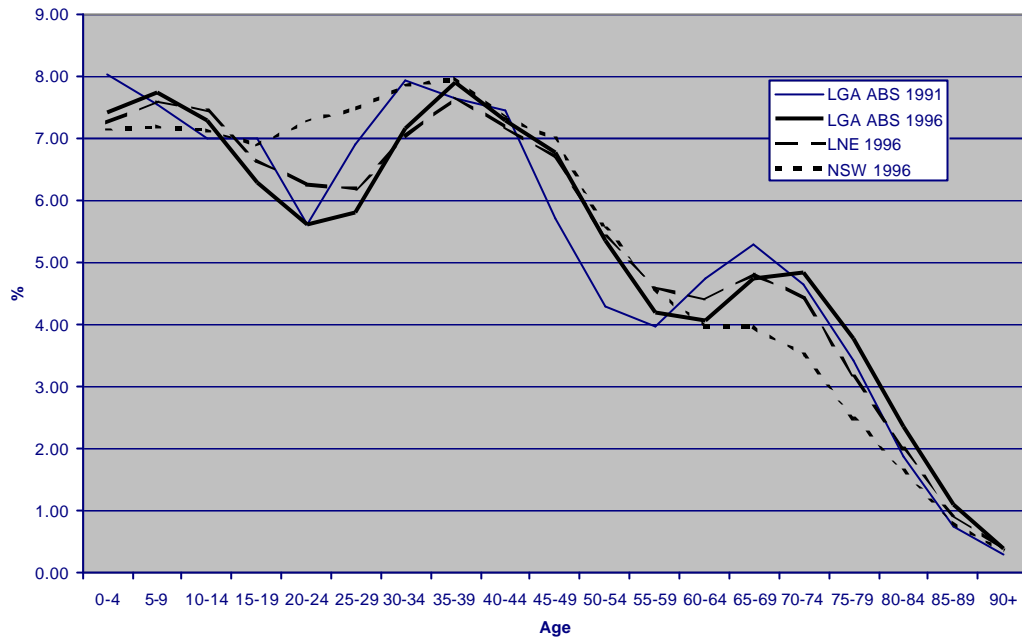
ABS demographic figures showed Gloucester LGA had a birth rate of 12.9 per 1000 and a death rate of 8.4 per 1000 in 1995. Gloucester LGA had almost three times more hospital admissions for people aged 0–4 years than New South Wales in 1995–96.

Housing

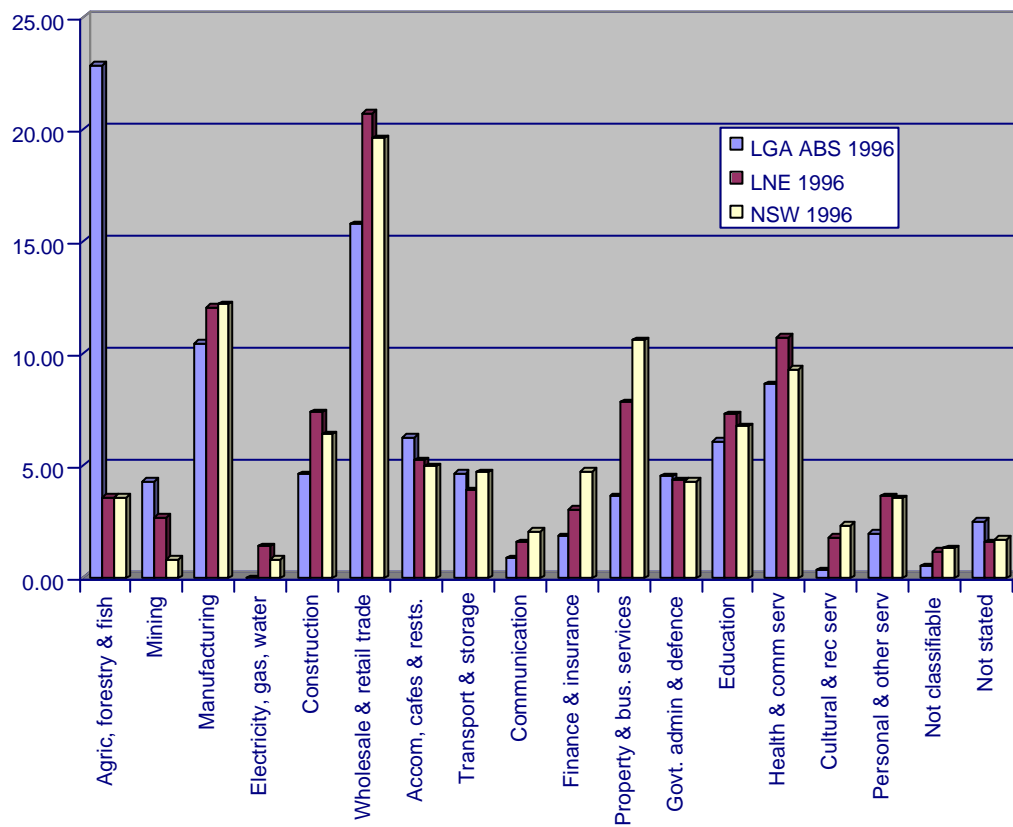
Separate houses were identified as the most popular occupied dwelling type at both the 1991 and 1996 censuses, with the number of dwellings of this type increasing by 155 over the intercensal period. The number of unoccupied separate houses increased by 68 over the same period. The number of apartments and flats also increased.

The 1996 census showed 983 dwellings were owned, 305 dwellings were being purchased and 383 dwellings were being rented. In 1996, the median housing repayment was \$693 per month and the median rent was \$95 per week. The average household size in 1996 was 2.6 people.

Gloucester LGA - Age Structure



Gloucester LGA - Employment by Industry



Gosford LGA

Gosford LGA covers 939 square kilometres in the south eastern region of the Lower North East study area. The major population centres in the LGA include Wagstaff, Killcare, Macmasters Beach, Mooney Mooney, Gosford, Patonga and Woy Woy.

Major industries contributing to the economy of the LGA include tourism (particularly that based on surfing and fishing), service industries, and commercial and light to medium industrial operations, including sandstone quarrying. Local primary industries include citrus fruit, passionfruit and vegetable growing, dairying, poultry farming, mixed farming and timber cutting. The area is a popular retirement district and commuter satellite district, and Gosford City is a service centre for the central coast region.

The Boudi National Park, Brisbane Water National Park, Cockle Bay Nature Reserve and Davidson Park State Recreation area, Dharug National Park, Ku-ring-Gai Chase National Park, Muogammarra Nature Reserves, Popran National Park and the Wyrabalong National Park are major protected areas in the Gosford LGA.

Gosford LGA has an airport at Gosford and the LGA has links to the Pacific highway. The efficient rail service and the Sydney–Newcastle expressway allow hundreds of Gosford residents to commute to Sydney for employment each day — making it almost a satellite town.

Population

The population of the Gosford LGA increased by 15 899 between the 1991 and 1996 censuses to 144 840 people in 1996. The median age for the LGA increased from 35 to 36 years in 1996, higher than the New South Wales median of 34 years, and equal to the median for the study area (36). The number of people less than 15 years increased by 3301 between 1991 and 1996. The Gosford LGA age structure chart showed that in 1991 and 1996, the area had around 1% to 1.5% fewer people aged 20 to 24 years and around 1% more people aged 60 to 74 years than found in New South Wales. The 1996 dependency ratio calculated by the ABS was 39.50%.

In 1996, 82.1% of the population were Australian-born and most were of Anglican faith and English-speaking. This was the lowest Australian-born population of LGAs in the study area. At the 1996 census 1620 people identified as Aboriginal and/or Torres Strait Islanders, over twice the number identified in the 1991 census data (778). At 0.6% of the 1996 population, this LGA (with Dungog LGA) had the lowest proportion of Aboriginal and/or Torres Strait Islander people in the study area in both 1991 and 1996.

Labour force

The 1996 census showed 5510 people were unemployed in a labour force of 62 887, an unemployment rate of 8.8%. The workforce participation rate was 55.94%.

In 1991, major industries of employment in the LGA recorded at the census were classified by the ABS as wholesale and retail trade, community services, and finance, property and business services. Agriculture, forestry, fishing and hunting employed 1.6% of the employed population.

In 1996, the major industry of employment in the Gosford LGA continued to be the wholesale and retail trade, followed by health and community services. Manufacturing gained prominence over property and business services in this time. Agriculture, forestry and fishing employed only 1.43% of the workforce, around half the proportion employed in New South Wales and the Lower North East study area.

The timber industry in 1996 employed 385 people, 17 in forestry and logging, 33 in sawmilling and timber dressing and 335 in other wood product manufacturing. This was an increase from 1991 when 270 people were employed in the industry. The greatest changes in employment were other wood product manufacturing, with an increase of 138 people employed in this category. In 1991 26 people were employed in forestry and logging, 47 in sawmilling and timber dressing and 197 in other wood product manufacturing.

Intermediate clerical, sales and service workers were the largest occupational group recorded at the 1996 census (9761 people), followed by professionals (9485) and tradespersons and related workers (7913).

Most of the labour force was aged between 35 and 44 years with almost one-third more people aged 55 to 64 out of the labour force than in the labour force. At the 1996 census, 835 people over the age of 65 years were recorded in the workforce.

Median weekly individual income in the Gosford LGA in 1996 was \$301. Median weekly household income for the same period was \$594.

Education

The census showed 14 751 children attended primary schools and 10 022 children attended secondary schools in 1996. This was an increase from 1991 when 12 681 children attended primary school and 8608 children attended secondary school.

In 1991, 41 777 people were recorded as having left school aged 15 years or less. In 1996, this figure was recorded as 43 422 people.

The number attending further educational institutions decreased over the intercensal period from 5690 people in 1991 to 6752 in 1996. The number recorded as having qualifications rose by 7828 people from 41 593 to 49 421 over the same period. The 1996 census showed 8226 people held tertiary qualifications. In both the 1991 and 1996 censuses, the ABS recorded engineering as the area where the greatest number held qualifications, with business and administration and health next in both censuses.

Health

Gosford LGA has two public hospitals and two private hospitals. The largest hospital is Gosford Hospital, a level five teaching hospital, with 442 acute care beds and 30 mental health beds. It has full medical and surgical facilities, accident and emergency, endoscopy, an oncology unit, and obstetrical and paediatric facilities. The other public hospital in the LGA, Woy Woy Hospital, has 63 beds and is principally a rehabilitation unit as well as providing beds for aged people awaiting places in nursing homes.

North Gosford Private Hospital has 130 beds providing general medical and surgical treatment and Brisbane Waters Private Hospital has 95 beds with general medical and surgical facilities as well as a specialist cardiovascular unit.

Other health and allied services in the LGA include six early childhood health clinics, a community women's health centre, and two community health centres.

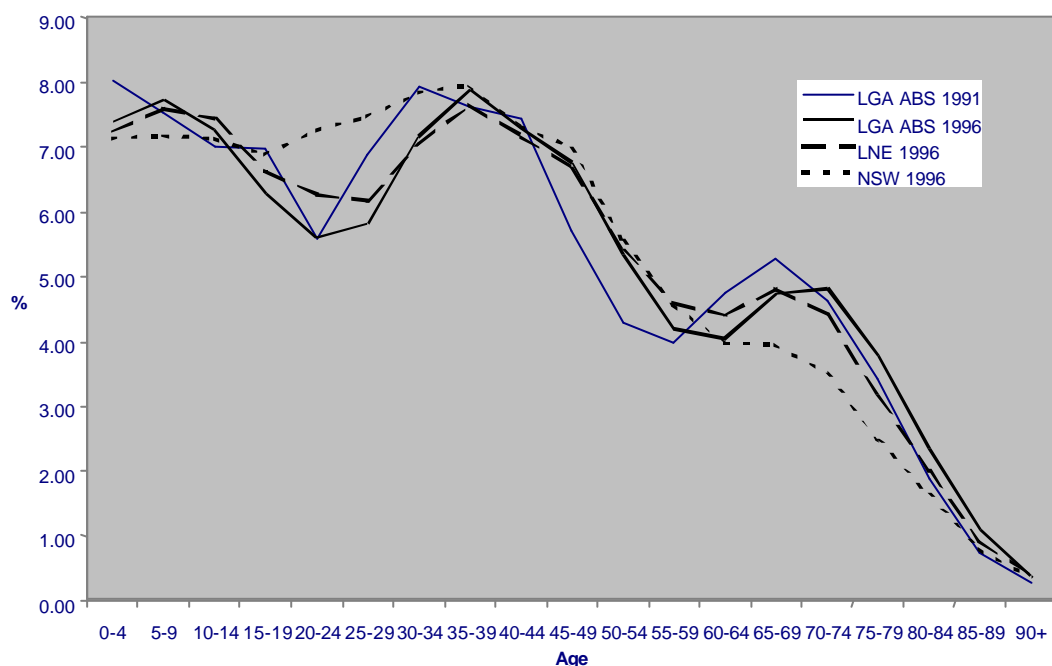
Housing

Separate houses were identified as the most popular occupied dwelling type at both the 1991 and 1996 censuses, with the number of dwellings of this type increasing by 2822 over the intercensal period. The number of unoccupied separate houses decreased by 533 over the same period. The number of semi-detached dwellings and townhouses and flats, units or apartments increased over the intercensal period.

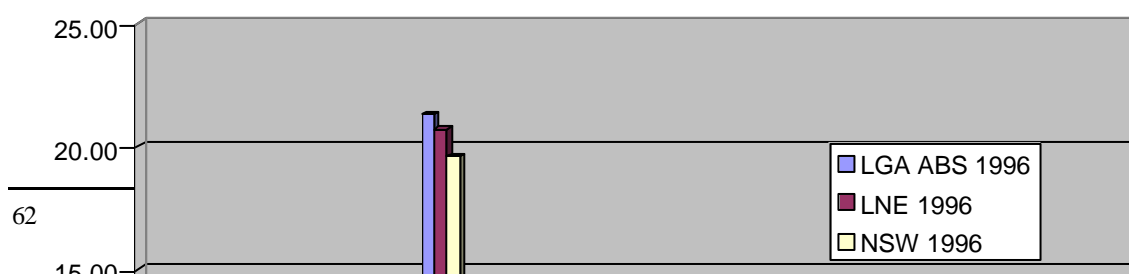
The 1996 census showed 24 280 dwellings were owned, 14 013 dwellings were being purchased and 14 530 dwellings were being rented. In 1996, the median housing repayment was \$878 per month and the median rent was \$150 per week, highest in the Lower North East study area.

The average household size in 1996 was 2.6 people.

Gosford LGA - Age Structure



Gosford LGA - employment by Industry



Great Lakes LGA

Great Lakes LGA covers 3374 square kilometres in the south eastern region of the Lower North East study area. The major population centres in the LGA include Forster-Tuncurry, Hawks Nest, Bulahdelah, Tea Gardens, Smiths Lake, Stroud, Pacific Palms, Blueys Beach, Nahiab, Green Point, North Arm Cove and Coomba Park.

Major industries contributing to the economy of the LGA include tourism, fishing, forestry, poultry raising, oyster farming and building. Tourism focuses on outdoor activities and house boating.

Major protected areas in the Great Lakes LGA include the Bandicoot Island Nature Reserve, Boondelbah Nature Reserve, Booti Booti National Park, Coolongolook Nature Reserve, John Gould Nature Reserve, Little Broughton Island Nature Reserve, Mills Island Nature Reserve, Myall Lakes National Park, Regatta Island Nature Reserve, Seal Rocks Nature Reserve, Wallis Lake Nature Reserve and the Yahoo Island Nature Reserve.

The Great Lakes LGA has an airport at Forster and road links to the Pacific highway.

Population

The population of the Great Lakes LGA increased by 2612 (10.04%) from the 1991 census to 28 609 people in 1996. The median age for the LGA increased from 42 to 44 years in 1996, higher than the medians for New South Wales (34 years) and the study area (36). Great Lakes LGA had the highest median age in the study area in both 1991 and 1996. The number of people under 15 years increased by 410 between 1991 and 1996. The age structure chart shows the LGA had a very different age profile to both New South Wales and the Lower

North East study area, having up to 2.5% fewer people aged 15 to 29 years and up to 3.5% more people aged between 60 and 74 years. This could be attributed to the area's popularity as a retirement location and the relatively low opportunities for employment in the area. The 1996 dependency ratio calculated by the ABS was 43.96%. This was the highest dependency ratio in the study area.

In 1996, 86.7% of the population were Australian-born and most were of Anglican faith and English-speaking. At the 1996 census, 653 people identified as Aboriginal and/or Torres Strait Islanders compared with 392 who identified in the 1991 census, a 66.58% increase over the period. In 1996 Aboriginal and/or Torres Strait Islanders comprised 2.28% of the population.

Labour force

The 1996 census showed 1507 people were unemployed in a labour force of 9814 people, an unemployment rate of 15.4%. The workforce participation rate was 42.48%, the lowest in the study area.

In 1991, major industries in the LGA recorded at the census were classified by the ABS as wholesale and retail trade, community services, and recreation, personal and other services. Agriculture, forestry, fishing and hunting employed 663 people (8.9%).

The employment profile in 1996 was much different. While wholesale and retail trade continued to be the dominant industry of employment, manufacturing and accommodation, cafes and restaurants moved into second and third ranked employers. In 1996, the agriculture, forestry and fishing sector employed 8.39% of the labour force.

The timber industry in 1996 employed 276 people, 51 in forestry and logging, 162 in sawmilling and timber dressing and 63 in other wood product manufacturing. This was a decrease from 1991 when 284 people were employed in the industry. There were changes in all categories, with less employed in forestry and logging and sawmilling and timber dressing and more in other wood product manufacturing. In 1991 66 people were employed in forestry and logging, 177 in sawmilling and timber dressing and 41 in other wood product manufacturing.

Tradespersons and related workers were the largest occupational group recorded at the 1996 census (1174 people), followed by intermediate clerical, sales and service workers (1138) and associated professionals (1098).

Most of the labour force was aged between 55 and 64 years and there were twice as many people aged 55 to 64 years out of the labour force than in the labour force. At the 1996 census, 302 people over the age of 65 years were recorded in the workforce.

Median weekly individual income in the Great Lakes LGA in 1996 was \$217. Median weekly household income for the same period was \$409.

Education

The census showed 2630 children attended primary schools and 1163 children attended secondary schools in 1996. This was an increase from 1991 for primary schools when 2270 children attended, and a decrease for secondary schools with 1548 children attending.

In 1991, 10 371 people were recorded as having left school aged 15 years or less. In 1996, there were 11 439 in this group.

The number attending further educational institutions decreased over the intercensal period from 862 people in 1991 to 395 in 1996. The number recorded as having qualifications rose by 1146 people from 7783 to 8929 over the same period. The 1996 census showed 1024 people held tertiary qualifications. In both the 1991 and 1996 censuses, the ABS recorded engineering as the area where the greatest number held qualifications, with business and administration and architecture and building next at both censuses.

Health

Most community health services are outreach services from Taree, Gloucester and Forster-Tuncurry. Aged care services are outreach services from Wingham. Identified needs include extension of outreach community health services, a better public hospital in Forster-Tuncurry, an accident and emergency department in the hospital and increased specialist services.

There are hospitals at Bulahdelah and Forster-Tuncurry, community health centres at Bulahdelah, Forster-Tuncurry and Hawks Nest and early childhood centres at Forster, Hawks Nest and Kendall.

ABS demographic statistics for 1995 showed Great Lakes LGA had almost identical birth and death rates, with 10.9 births per 1000 and 10.2 deaths per 1000. Great Lakes LGA had almost three times more hospital admissions than NSW in the 0–4 year age group in 1995–96.

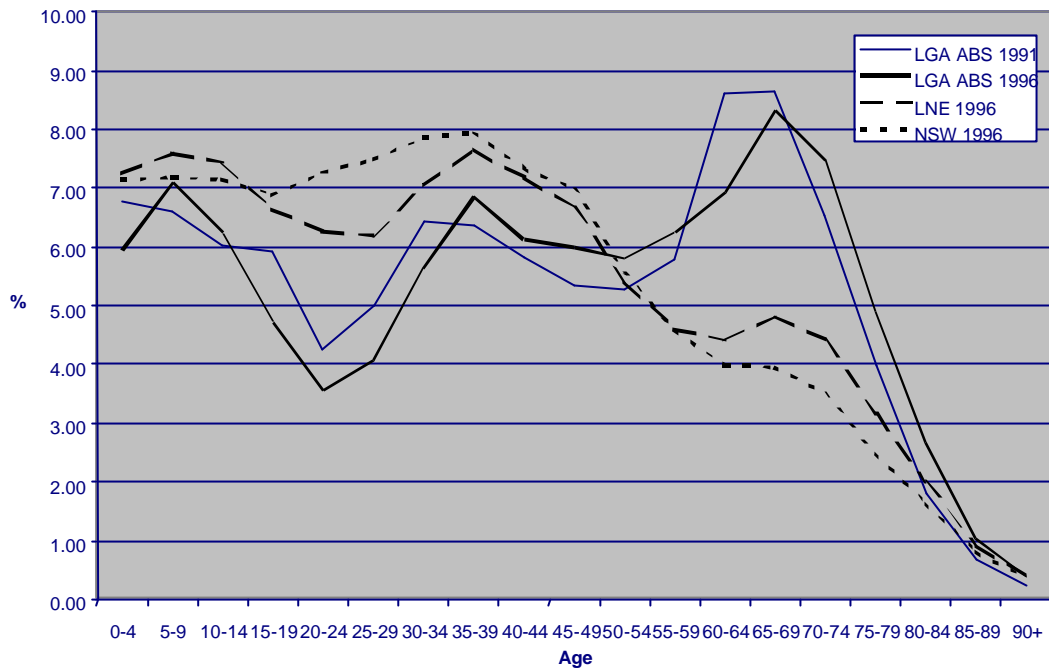
Housing

Separate houses were identified as the most popular occupied dwelling type at both the 1991 and 1996 censuses, with the number of dwellings of this type increasing by 1152 over the intercensal period. The number of unoccupied separate houses increased by 51 over the same period. The number of semi-detached dwellings and townhouses and flats, units or apartments increased over the intercensal period.

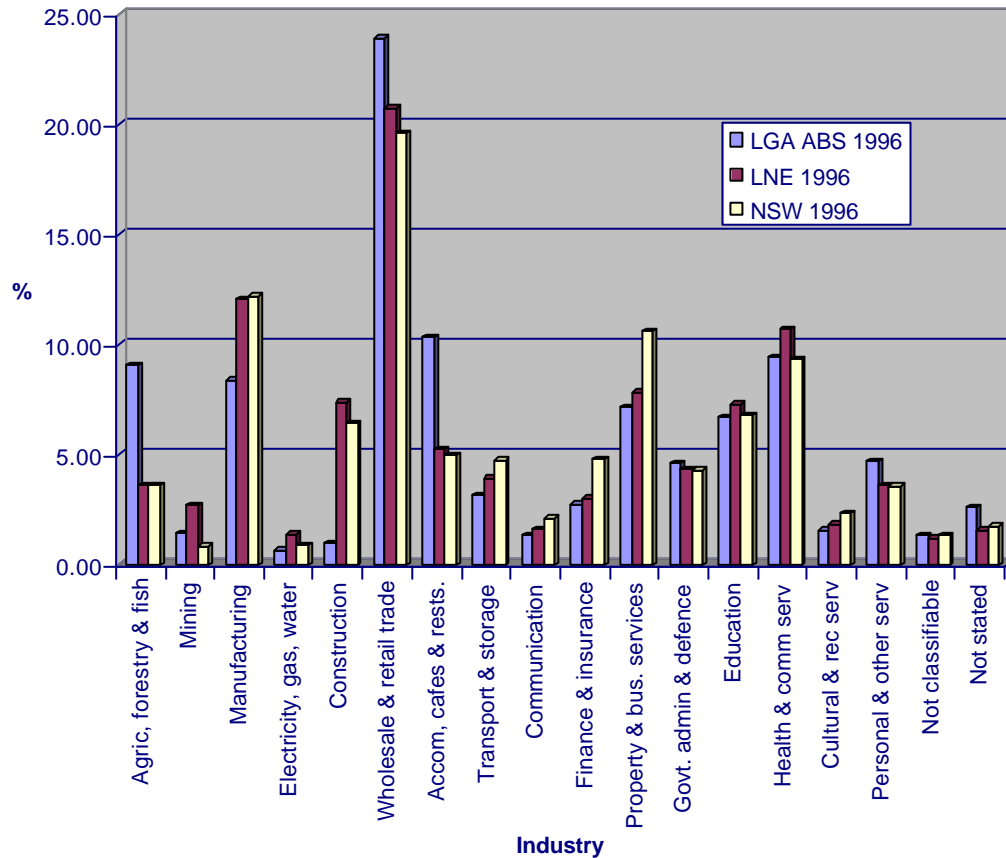
The 1996 census showed 6218 dwellings were owned, 1596 dwellings were being purchased and 2595 dwellings were being rented. In 1996, the median housing repayment was \$702 per month and the median rent was \$120.

The average household size in 1996 was 2.4 people, lowest in the study area and undoubtedly influenced by the high number of mature person households.

Great Lakes - Age Structure



Great Lakes LGA - Employment by Industry



Greater Taree LGA

Greater Taree LGA covers 3728 square kilometres in the central eastern region of the Lower North East study area. The major population centres in the LGA include Taree, Wingham, Old Bar, Harrington, Tionee, Hallidays Point, Diamond Beach, Lansdowne, Coopernook, Manning Point, Wallabi Point.

Major industries contributing to the economy of the LGA include dairying, beef cattle grazing, mixed farming, oyster farming, boat building, timber cutting, automotive parts manufacture, heavy engineering, and clothing manufacturing.

Major protected areas in the Greater Taree LGA include the Booti Booti State Recreation Area, the Coocumbac Island Nature Reserve, the Crowdy Bay National Park, the Khappinghat Nature Reserve and the Weelah Nature Reserve.

Greater Taree LGA has an airport at Taree and the LGA has links to the Pacific highway.

Population

The population of the Greater Taree LGA increased by 1923 (4.74%) between the 1991 and 1996 censuses to 42 410 people in 1996. The median age for the LGA increased from 35 years to 37 years in 1996, higher than the NSW median (34 years) and the median for the study area (36). The number of people under 15 years increased by 1685 between 1991 and 1996. The proportion of people aged 15 to 29 years was 1.5 to 2.5% lower than found in the Lower North East study area and in New South Wales. The LGA had around 1% higher proportion of people between 50 and 74 years. The 1996 dependency ratio calculated by the ABS was 39.76%.

In 1996, 91.1% of the population were Australian-born and most were of Anglican faith and English-speaking. At the 1996 census 1217 people identified as Aboriginal and/or Torres Strait Islanders, compared with 795 who identified in the 1991 census. In 1996, Aboriginal and/or Torres Strait Islanders comprised 2.87% of the population.

Labour force

The 1996 census showed 2348 people were unemployed in a labour force of 16 368 people with an unemployment rate of 14.3%. The workforce participation rate was 50.48%.

In 1991, major industries in the LGA recorded at the census were classified by the ABS as wholesale and retail trade, community services, and manufacturing. Agriculture, forestry, fishing and hunting employed 1127 people (8.3%).

In 1996, the major industry of employment remained the wholesale and retail trade, followed by manufacturing and health and community services. The proportion of people employed in manufacturing in the LGA was around 3% higher than were employed in the Lower North East study area or in New South Wales. Agriculture, forestry and fishing employed 8% of the workforce, double the proportion employed in the Lower North East or in New South Wales.

The timber industry in 1996 employed 319 people, 87 in forestry and logging, 80 in sawmilling and timber dressing and 152 in other wood product manufacturing. This was an increase from

1991 when 298 people were employed in the industry. All categories changed significantly between 1991 and 1996, with increases in forestry and logging and other wood product manufacturing and a decrease in sawmilling and timber dressing. In 1991, 51 people were employed in forestry and logging, 134 in sawmilling and timber dressing and 113 in other wood product manufacturing.

Tradespersons and related workers were the largest occupational group recorded at the 1996 census (1996 people), followed by professionals (1986) and labourers and related workers (1660).

Most of the labour force was aged between 35 and 44 years and there were more people aged 55 to 64 and 15 to 19 years out of the labour force than in the labour force. At the 1996 census, 328 people over the age of 65 years were recorded in the workforce.

Median weekly individual income in the Greater Taree LGA in 1996 was \$235. Median weekly household income for the same period was \$452.

Education

The census showed 4754 children attended primary schools and 3086 children attended secondary schools in 1996. This was an increase from 1991 when 4416 children attended primary school and 3049 children attended secondary school.

In 1991, 14 012 people were recorded as having left school aged 15 years or less. In 1996, this group was recorded as 14 158 people.

The number attending further educational institutions decreased over the intercensal period from 1441 people in 1991 to 1404 in 1996. The number recorded as having qualifications rose by 1025 people from 11, 293 to 12 318 over the same period. The 1996 census showed 1551 people held tertiary qualifications. In both the 1991 and 1996 censuses, the ABS recorded engineering as the area where the greatest number held qualifications, with business and administration and health next in both censuses.

Health

Greater Taree LGA has two hospitals, one at Taree and one at Wingham. Taree hospital has 176 beds and is a general surgical and medical hospital. Taree also has a community health centre, early childhood centre and women's health centre.

Wingham Hospital is for primary and extended care, has 16 beds, and its principal role is assessment and rehabilitation. In the grounds of the hospital is a dementia unit and aged services. Once a month the hospital runs a limb clinic.

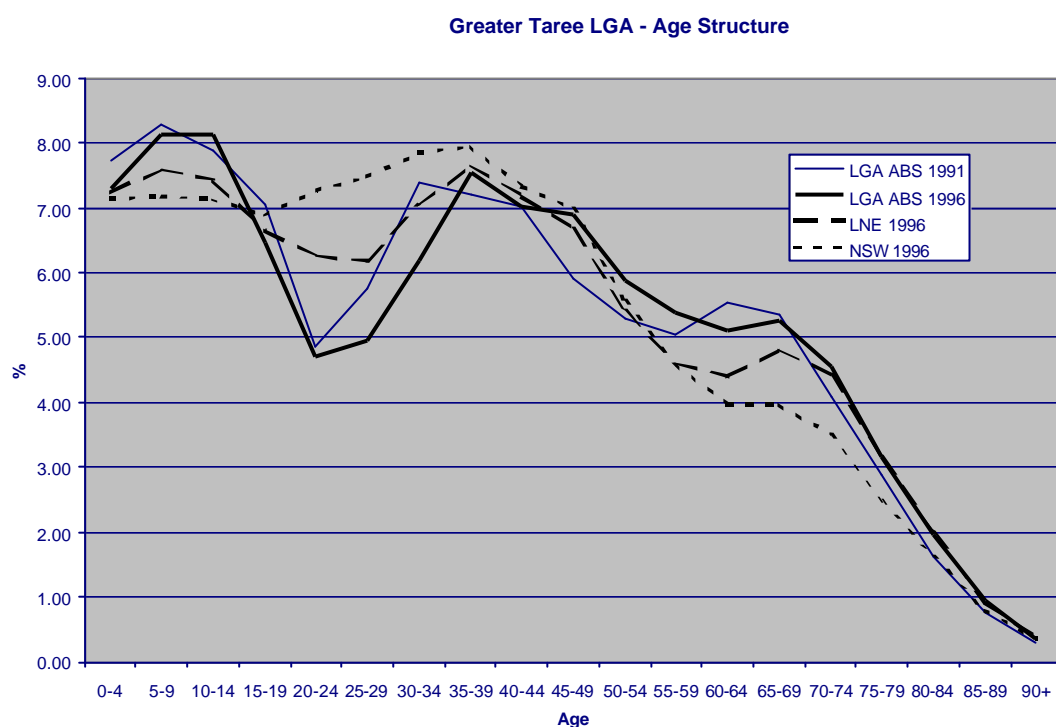
ABS demographic statistics showed that in 1995, the Greater Taree LGA had a birth rate of 12.3 per 1000, one-third higher than the proportion of deaths which were recorded at 8.6 per 1000. The LGA had almost three times the rate of hospital admissions than were recorded in NSW in 1995–96 in the 0–4 year age group.

Housing

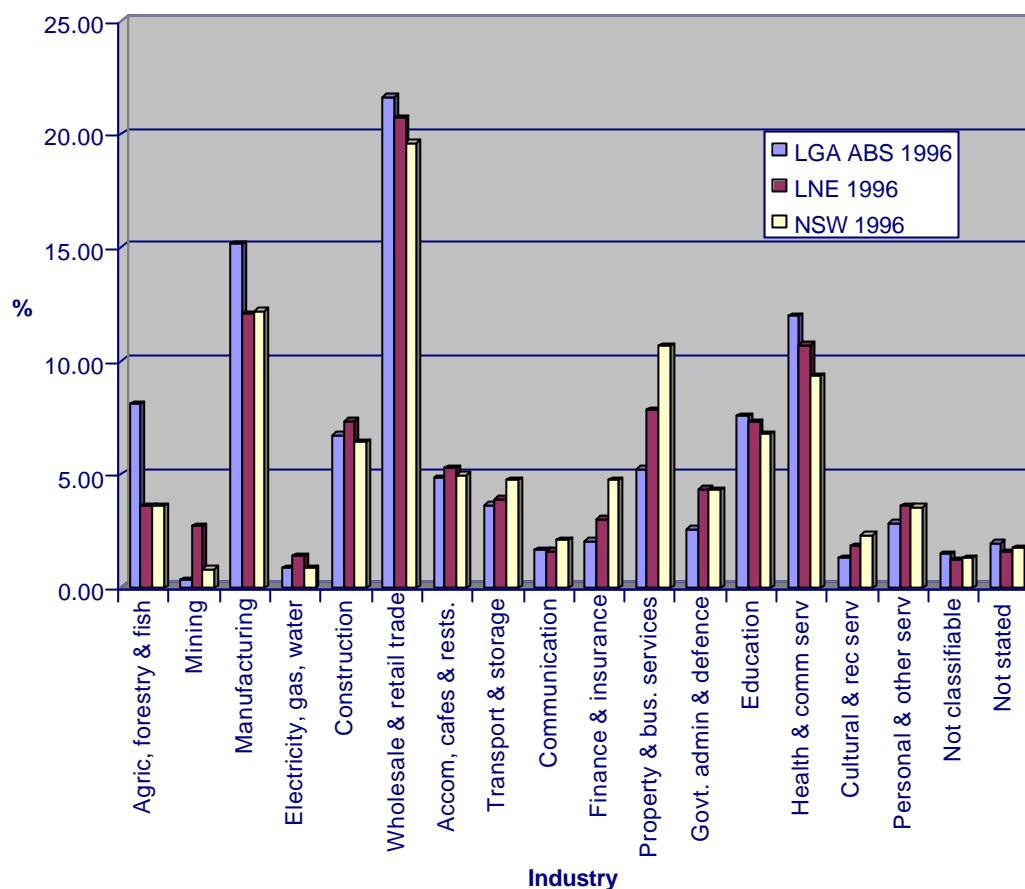
Separate houses were identified as the most popular occupied dwelling type at both the 1991 and 1996 censuses, with the number of dwellings of this type increasing by 2822 over the intercensal period. The number of unoccupied separate houses increased by 307 over the same period. The number of semi-detached dwellings and townhouses and flats, units or apartments increased over the intercensal period.

The 1996 census showed 7856 dwellings were owned, 3179 dwellings were being purchased and 3710 dwellings were being rented. In 1996, the median housing repayment was \$670 per month and the median rent was \$100 per week.

The average household size in 1996 was 2.6 people.



Greater Taree LGA - Employment by Industry



Hastings LGA

Hastings LGA covers 3684 square kilometres in the central eastern region of the Lower North East study area. The major population centres in the LGA include Port Macquarie, Camden Haven, Wauchope, Lake Cathie, Bonny Hills, Kendall and Beechwood.

The main industries contributing to the economy of the LGA include dairy farming, timber harvesting, fishing, minor manufacturing, building and land development, hospitality and tourism.

Major protected areas in the Hastings LGA include the Boorgana Nature Reserve, Crowdy Bay National Park, Jasper Nature Reserve, Kattang Nature Reserve, Lake Innes Nature Reserve, Limeburners Creek Nature Reserve, Macquarie Nature Reserve, Sea Acres Nature Reserve and Werrikimbe National Park.

The Hastings LGA has an airport at Port Macquarie and the LGA has links to the Pacific highway and the Oxley highway.

Population

The population of the Hastings LGA increased by 7966 (15.92%) between the 1991 and 1996 censuses to 58 010 people in 1996. The median age for the LGA increased from 39 years to 41 years in 1996, higher than the medians for NSW (34 years) and the study area (36). The number of people under 15 years increased by 1256 (11.71%) between 1991 and 1996. The Hastings LGA age structure chart showed the LGA had a significantly lower proportion of its population aged between 15 and 34 years (2 to 3% lower) and a much higher proportion aged 55 to 74 years (around 2%) when compared with the Lower North East study area and with New South Wales. This reflects the high unemployment in the area (16.1%), the absence of large educational institutions in the LGA and the attractiveness of the area for retirement. The 1996 dependency ratio calculated by the ABS was 42.25%.

In 1996, 86.8% of the population were Australian-born and most were of Anglican faith and English-speaking. At the 1996 census 943 people identified as Aboriginal and/or Torres Strait Islanders, compared with 431 who identified in the 1991 census, a 118.79% increase over the period. In 1996, Aboriginal and/or Torres Strait Islanders comprised 1.63% of the population.

Labour force

The 1996 census showed 3553 people were unemployed in a labour force of 22 105, an unemployment rate of 16.1%. The workforce participation rate was 48.01%.

In 1991, major industries in the LGA recorded at the census were classified by the ABS as wholesale and retail trade, community services, and recreation, personal and other services. Agriculture, forestry, fishing and hunting employed 959 people (6.0%).

In 1996, the wholesale and retail trade continued to be the major employing industry, followed by health and community services and construction. The agriculture, forestry and fishing industry employed 5.3% of the labour force.

The timber industry in 1996 employed 329 people, 79 in forestry and logging, 150 in sawmilling and timber dressing and 100 in other wood product manufacturing. This was a decrease from 1991 when 389 people were employed in the industry. The most significant declines were in forestry and logging and other wood product manufacturing. In 1991, 114 people were employed in forestry and logging, 157 in sawmilling and timber dressing and 118 in other wood product manufacturing.

Intermediate clerical, sales and service workers were the largest occupational group recorded at the 1996 census (3020 people), followed by professionals (2714) and tradespersons and related workers (2576).

Most of the labour force was aged between 35 and 44 years and there were twice as many people aged 55 to 64 years out of the labour force as in the labour force. At the 1996 census, 473 people over the age of 65 years were recorded in the workforce.

Median weekly individual income in the Hastings LGA in 1996 was \$235. Median weekly household income for the same period was \$446.

Education

The census showed 2755 children attended primary schools and 1921 children attended secondary schools in 1996. This was a halving of the primary attendances and a doubling of the secondary from 1991 when 4867 children attended primary school and 3358 children attended secondary school.

In 1991, 18 059 people were recorded as having left school aged 15 years or less. In 1996, there were 20 435 in this group.

The number attending further educational institutions decreased over the intercensal period from 2106 people in 1991 to 1952 in 1996. The number recorded as having qualifications rose by 3245 people from 15 487 to 18 732 over the same period. The 1996 census showed 2537 people held tertiary qualifications. In both the 1991 and 1996 censuses, the ABS recorded engineering as the area where the greatest number of people held qualifications, with business and administration second. Architecture and building was displaced for third ranking in the 1996 census by health.

Health

The LGA has two public hospitals, a private hospital and a range of community health services.

Port Macquarie Base Hospital has 161 beds and is a privately owned hospital for public patients. It provides general medical and surgical care and a 24-hour accident and emergency service.

Port Macquarie Private Hospital is for private patients and has 84 beds, with general medical and surgical care, as well as post-natal care and a high dependency unit.

Wauchope District Memorial Hospital is a public hospital with 32 beds and provides general medical and some surgical care as well as accident and emergency and allied health services.

There are community health centres at three locations in the LGA and early childhood health clinics at five.

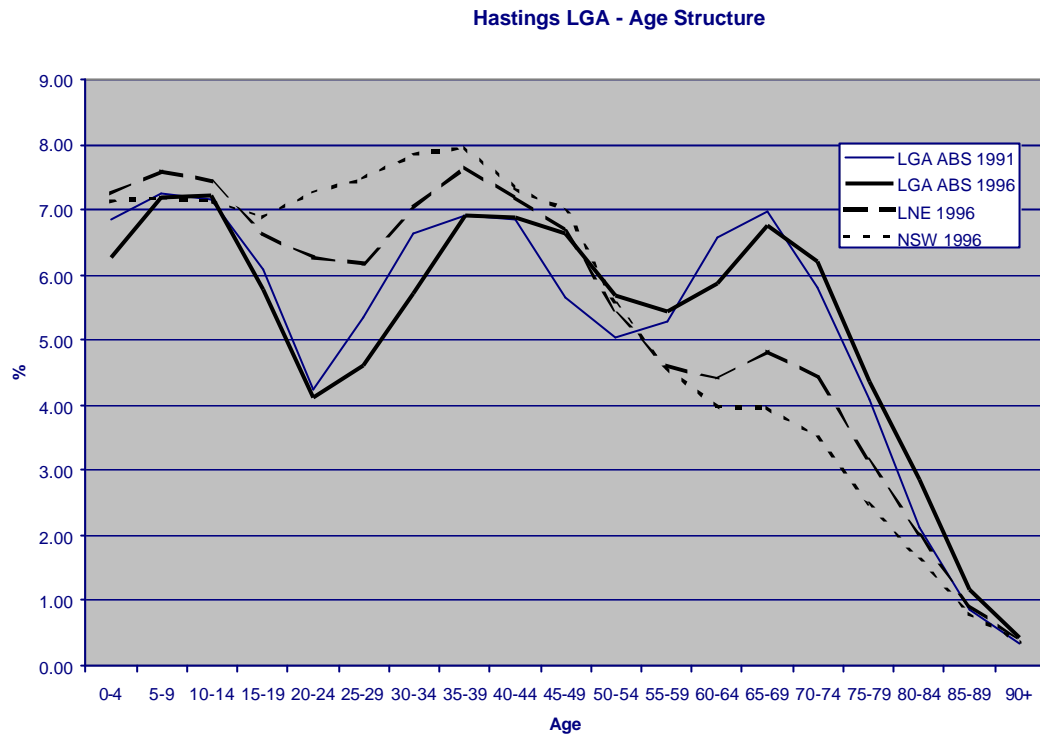
ABS demographic figures showed that in 1995 Hastings LGA had a birth rate of 11.4 per 1000 and a death rate of 10.2 per 1000. The 0–4 age group had three times more hospital admissions than New South Wales.

Housing

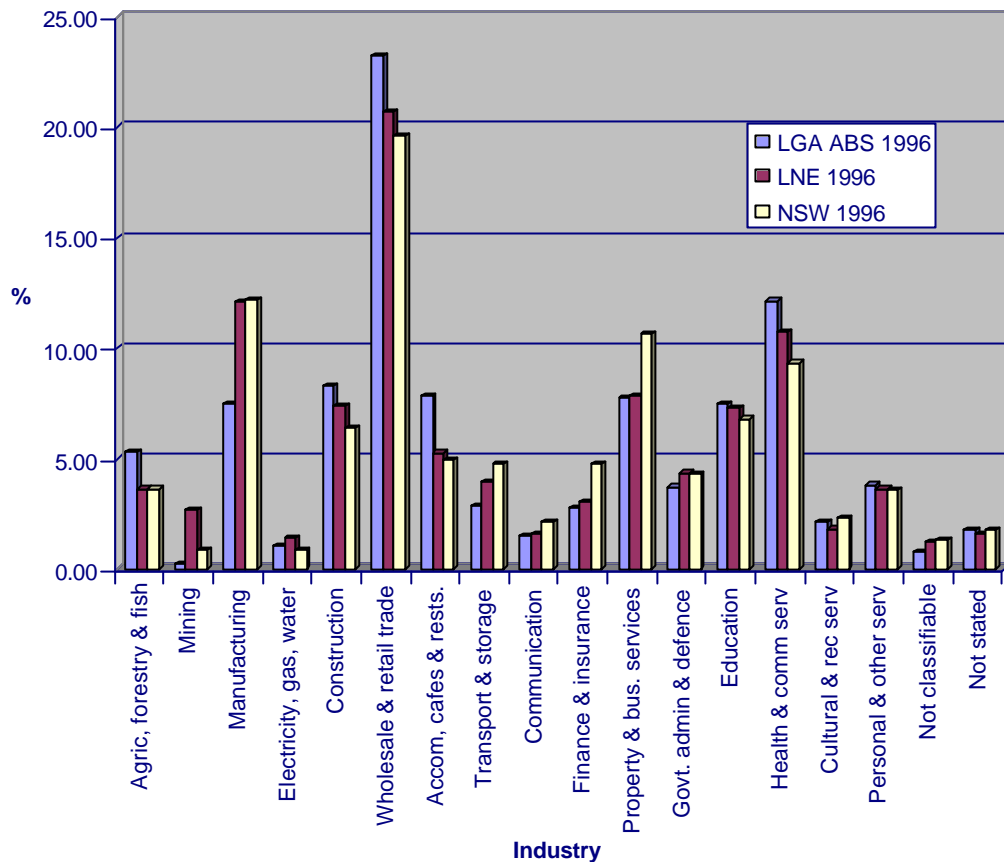
Separate houses were identified as the most popular occupied dwelling type at both the 1991 and 1996 censuses, with the number of dwellings of this type increasing by 2825 over the intercensal period. The number of unoccupied separate houses increased by 101 over the same period. The number of semi-detached dwellings and townhouses increased over the intercensal period and flats, units or apartments decreased in number, probably due to reclassification of dwellings.

The 1996 census showed 10 615 dwellings were owned, 4010 dwellings were being purchased and 5451 dwellings were being rented. In 1996, the median housing repayment was \$758 per

month and the median rent was \$130 per week. The average household size in 1996 was 2.5 people.



Hastings LGA - Employment by Industry



Kempsey LGA

Kempsey LGA covers 3377 square kilometres in the north eastern region of the Lower North East study area. The major population centres in the LGA include Kempsey, South West Rocks, Crescent Head, Smithtown, Gladstone, Frederickton, Stuarts Point, Green Hill, and Hat Head.

Major industries contributing to the economy of the LGA include the Nestles Company, United Dairies, Akubra Hats, King Gee, Boral Bricks, and Allen Taylor Sawmills. Tourism is focused on the historic Trial Bay Gaol, beaches and use of national parks.

Major protected areas in the Kempsey LGA include the Arakoon State Recreation Area, Hat Head National Park, New England National Park, Willi Willi Caves Nature Reserve, Yarravel Nature Reserve.

The Kempsey LGA has an airport at Kempsey and the LGA has links to the Pacific highway.

Population

The population of the Kempsey LGA increased by 1126 (4.45%) between the 1991 and 1996 censuses to 26 430 people in 1996. The median age for the LGA increased from 34 to 37 years in 1996, bring it higher than the medians for NSW (34 years) and the study area (36). The number of people under 15 years increased by 45 (0.71%) between 1991 and 1996. The chart showing the Kempsey LGA age structure shows there was a much lower proportion of young people (aged 15 to 29 years) in the LGA than in the Lower North East or in New South Wales (2 to 2.5%). Around the same proportions of people at all other age groups except those aged 5 to 14 years (around 1% more) and 60 to 64 years (around 1% more). The dependency ratio calculated by the ABS was 39.15%.

In 1996, 89.4% of the population were Australian-born and most were of Anglican faith and English-speaking. At the 1996 census 1793 people identified as Aboriginal and/or Torres Strait Islanders compared with 1317 who identified in the 1991 census, a 36.14% increase over the period. With 6.78% of the population in this group, Kempsey had the highest proportion of Aboriginal and/or Torres Strait Islanders in the study area in 1996.

Labour force

The 1996 census showed 1959 people were unemployed in a labour force of 10 016 people with an unemployment rate of 19.6%, the highest in the study area. This was a decrease from 1991 when the unemployment rate was 22.5%, also the highest in the study area. The workforce participation rate in 1996 was 49.91%.

In 1991, major industries in the LGA recorded at the census were classified by the ABS as wholesale and retail trade, community services, and manufacturing. Agriculture, forestry, fishing and hunting employed 959 people (9.2%).

In 1996, the main industries of employment remained the same as in 1991. However, the proportion employed in agriculture, forestry and fishing declined to 8.60%.

The timber industry in 1996 employed 133 people, 41 in forestry and logging, 60 in sawmilling and timber dressing and 32 in other wood product manufacturing. This was a decrease from 1991 when 143 people were employed in the industry. The most significant decline was in sawmilling and timber dressing. In 1991, 43 people were employed in forestry and logging, 74 in sawmilling and timber dressing and 26 in other wood product manufacturing.

Tradespersons and related workers were the largest occupational group recorded at the 1996 census (1133 people), followed by intermediate clerical, sales and service workers (1125) and professionals (1063).

Most of the labour force was aged between 35 and 44 years and there were more people aged 55 to 64 years and 15 to 19 years out of the labour force than in the labour force. At the 1996 census, 190 people over the age of 65 years were recorded in the workforce.

Median weekly individual income in the Kempsey LGA in 1996 was \$217. Median weekly household income for the same period was \$429.

Education

The census showed 2923 children attended primary schools and 1935 children attended secondary schools in 1996. This was an increase in enrolments from 1991 when 2840 children attended primary school and 1874 children attended secondary school.

In 1991, 8859 people were recorded as having left school aged 15 years or less. In 1996, there were 9023 people in this group.

The number attending further educational institutions decreased over the intercensal period from 963 people in 1991 to 913 in 1996. The number recorded as having qualifications rose by 968 people from 6377 to 7345 over the same period. The 1996 census showed 857 people held tertiary qualifications. In both the 1991 and 1996 censuses, the ABS recorded engineering as the area where the greatest number held qualifications, with business and administration and health next at both censuses.

Health

Kempsey LGA has only one hospital, located at Kempsey. The hospital has 104 beds and provides general acute care such as medical, surgical, maternity and paediatric. Five doctors and two specialists staff it.

Also located in Kempsey is the Durri Aboriginal Health Service, which provides a range of medical and para-medical services, primarily to the Aboriginal population of Kempsey.

Other health services located in the LGA include two community health centres and four early childhood centres.

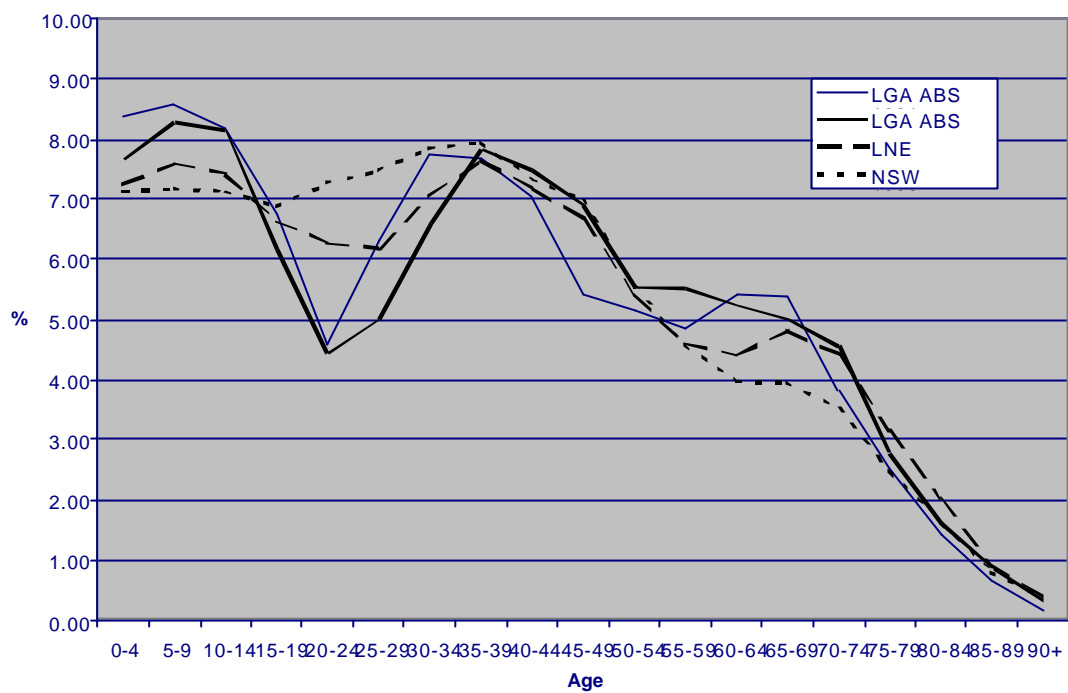
ABS demographic statistics show that in 1995 Kempsey LGA had a birth rate of 14.4 per 1000 and a death rate of 8.8 per 1000. There was three times the rate of hospital admission of New South Wales in 1995–96 in the 0–4 age group, and one-third more than the rate for New South Wales admitted in the 75+ age group.

Housing

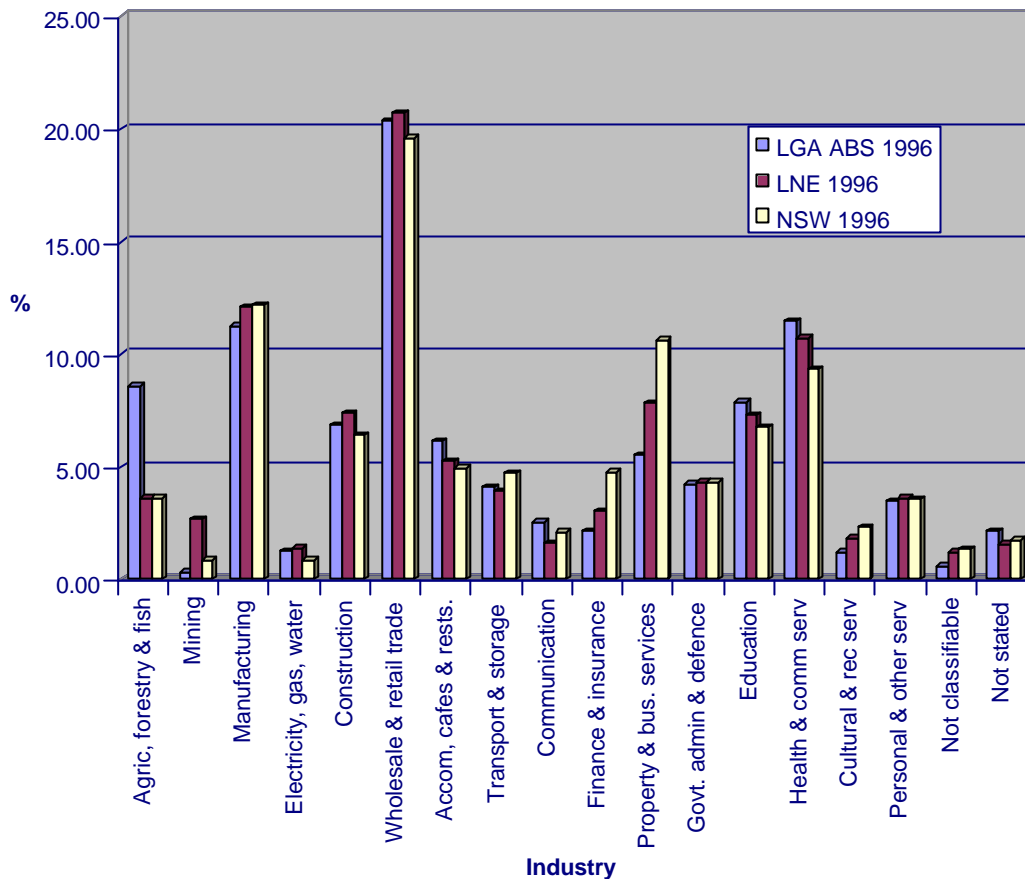
Separate houses were identified as the most popular occupied dwelling type at both the 1991 and 1996 census, with the number of dwellings of this type increasing by 826 over the intercensal period. The number of unoccupied separate houses increased by 96 over the same period. The number of semi-detached dwellings and townhouses, flats, units and apartments increased over the intercensal period.

The 1996 census showed 4869 dwellings were owned, 1716 dwellings were being purchased and 2331 dwellings were being rented. In 1996, the median housing repayment was \$607 month and the median rent was \$100 per week. The average household size in 1996 was 2.6 people.

Kempsey LGA - Age



Kempsey LGA - Employment by Industry



Lake Macquarie LGA

Lake Macquarie LGA covers 643 square kilometres in the south eastern region of the Lower North East study area. The major population centres in the LGA include some suburbs of Newcastle, Belmont, Wanti, Rathmines, Bonnell's Bay, Avondale, Cooranbong, Wyee, Windermere Park, Dora Creek, Morisset, Nords Wharf, Killingworth, Yarrawonga Park, Silverwater, Mirrabooka, Brightwaters and Sunshine.

The largest industries contributing to the economy of the LGA include coal mining, power generation, manufacturing, and tourism focused on caves, beaches and resorts.

Protected areas in the Lake Macquarie LGA include the Awabakal Nature Reserve and the Glenrock State Recreation Area.

The Lake Macquarie LGA has the Aeropelican Airport at Belmont and the LGA has links to the Pacific highway and the Sydney–Newcastle freeway.

Population

The population of the Lake Macquarie LGA increased by 8398 (5.18%) between the 1991 and 1996 censuses to 170 495 people in 1996. In both 1991 and 1996, the Lake Macquarie LGA had the largest population in the study area. The median age for the LGA increased from 33 to 35 years in 1996, bringing it higher than the median for New South Wales (34 years) but lower than that for the study area (36). The number of people under 15 years increased by 913 (2.45%) between 1991 and 1996 giving the LGA the greatest proportion of people under 15 in the study area in both 1991 and 1996. The Lake Macquarie LGA age structure generally parallels that of the Lower North East study area and New South Wales, but in the 15 to 29 year age group, the LGA and New South Wales have around 1% fewer than found in the Lower North East study area. The 1996 dependency ratio calculated by the ABS was 36.16%.

In 1996, 87.3% of the population were Australian-born and most were of Anglican faith and English-speaking. At the 1996 census 2774 people identified as Aboriginal and/or Torres Strait Islanders compared with 1722 in the 1991 census, a 61.09% increase over the period. In 1996 this group comprised 1.63% of the population.

Labour force

The 1996 census showed 8191 people were unemployed in a labour force of 75 375 people with an unemployment rate of 10.9%. This was a decrease from 1991 when the unemployment rate was 11.67%. The workforce participation rate in 1996 was 56.96%.

In 1991, major industries in the LGA recorded at the census were classified by the ABS as: wholesale and retail trade, community services, and manufacturing. Agriculture, forestry, fishing and hunting employed 372 people (0.6%).

In 1996, wholesale and retail trade remained the dominant employer but manufacturing overtook health and community services to become second-most important employer.

The timber industry in 1996 employed 315 people, 43 in forestry and logging, 22 in sawmilling and timber dressing and 250 in other wood product manufacturing. This was an increase from 1991 when 279 people were employed in the industry. There was an increase in all categories between 1991 and 1996. In 1991, 30 people were employed in forestry and logging, 16 in sawmilling and timber dressing and 233 in other wood product manufacturing.

Tradespersons and related workers were the largest occupational group recorded at the 1996 census (10 651 people), followed by intermediate clerical, sales and service workers (10 544) and professionals (10 706).

Most of the labour force was aged between 35 and 44 years and there were more people aged 55 to 64 years out of the labour force than in the labour force. At the 1996 census, 556 people over the age of 65 years were recorded in the workforce.

Median weekly individual income in the Great Lakes LGA in 1996 was \$275. Median weekly household income for the same period was \$603.

Education

The census showed 17 631 children attended primary schools and 12 504 children attended secondary schools in 1996. This was an increase in enrolments from 1991 when 16 973 children attended primary school and 11 769 children attended secondary school.

In 1991, 56 161 people were recorded as having left school aged 15 years or less. In 1996, there were 56 334 in this group.

The number attending further educational institutions decreased over the intercensal period from 10 083 people in 1991 to 9787 in 1996. The number recorded as having qualifications rose by 5979 people from 50 031 to 56 010 over the same period. The 1996 census showed 9032 people held tertiary qualifications. In both the 1991 and 1996 censuses, the ABS recorded engineering as the area where the greatest number held qualifications, with business and administration, and health next at both censuses.

Health

Lake Macquarie LGA has two public hospitals, two private hospitals, five community health services and three early childhood centres.

The public hospital at Belmont has 100 beds, accident and emergency services, medical and surgical, obstetrics and gynaecology and allied health services. The other public hospital in the LGA is located at Morisset, has 136 beds and specialises in mental health.

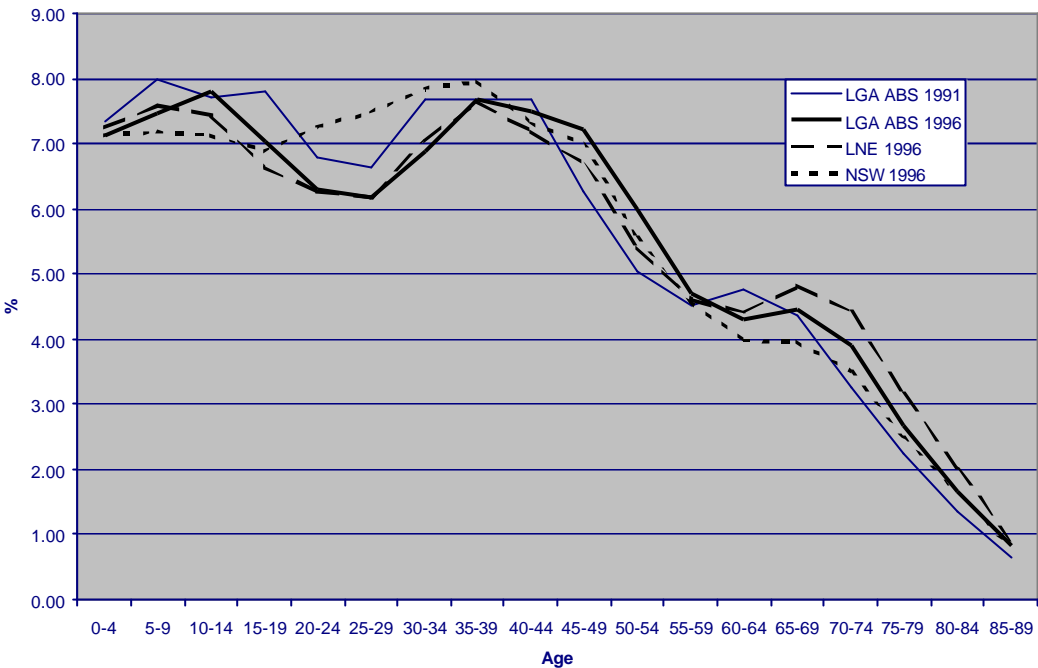
Warners Bay Private Hospital has 76 beds and provides general surgery, some medical, day surgery, and some palliative care. It specialises in orthopaedic surgery and urology.

Housing

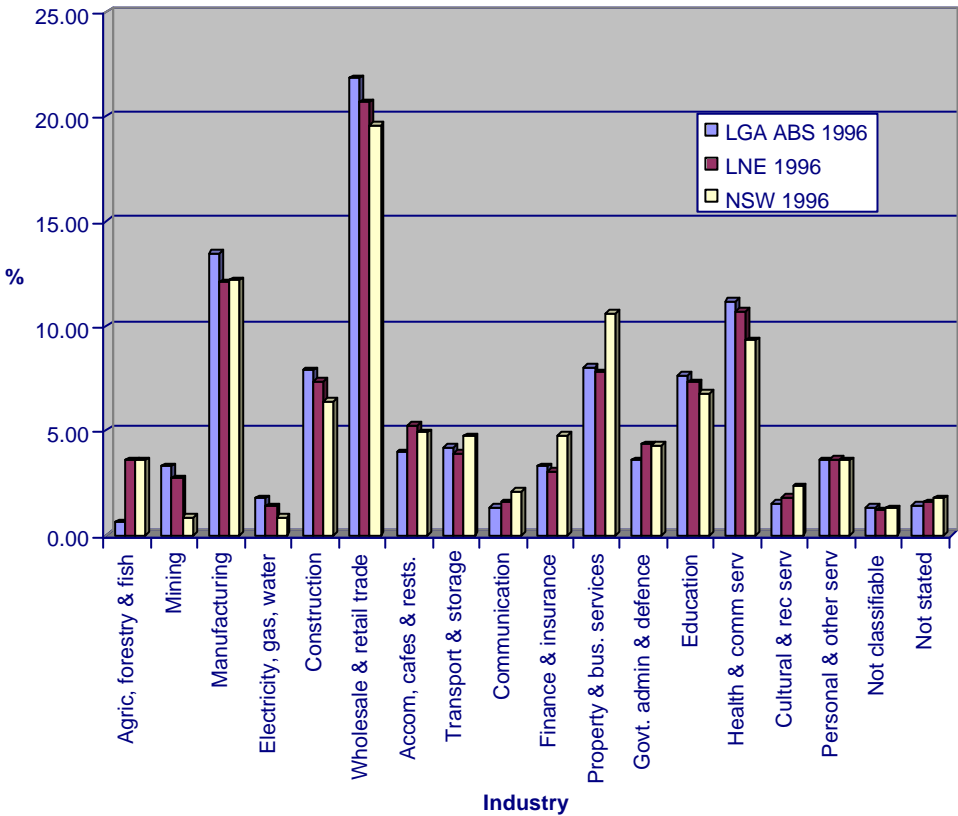
Separate houses were identified as the most popular occupied dwelling type at both the 1991 and 1996 censuses, with the number of dwellings of this type increasing by 4142 over the intercensal period. The number of unoccupied separate houses increased by 287 over the same period. The number of semi-detached dwellings and townhouses, flats, units and apartments increased over the intercensal period.

The 1996 census showed 28 779 dwellings were owned, 16 142 dwellings were being purchased and 13 524 dwellings were being rented. In 1996, the median housing repayment was \$780 per month and the median rent was \$125 per week. The average household size in 1996 was 2.7 people.

Lake Macquarie LGA - Age Structure



Lake Macquarie LGA - Employment by Industry



Maitland LGA

Maitland LGA covers 391 square kilometres in the south eastern region of the Lower North East study area. The major population centres in the LGA include Maitland, Greta East, Lochinvar and Windella Downs.

Major industries contributing to the economy of the LGA include P.G.H Pipes Australia, National Textiles, Visy Board P/L and tourism based on historic places, the Hunter Valley Steamfest and Hunter Valley wineries.

There are no major protected areas in the Maitland.

The Maitland LGA has an airport at Maitland and the LGA has links to the New England highway.

Population

The population of the Maitland LGA increased by 2983 (6.35%) between the 1991 and 1996 censuses to 49 941 people in 1996. The median age for the LGA increased from 30 to 32 years in 1996, making it lower than the median for NSW (34 years) and the study area (36). The number of people under 15 years increased by 357 (2.95%) between 1991 and 1996. While the population structure shown in the Maitland LGA age structure chart generally paralleled that for New South Wales and the Lower North East study area, the chart showed the LGA has 1 to 1.5% more people in the 0 to 14 year age group and around 1% less in the 55 to 69 year age group. The 1996 dependency ratio calculated by the ABS was 35.41%.

In 1996, 89.9% of the population were Australian-born and most were of Anglican faith and English-speaking. At the 1996 census 847 people or 1.7% identified as Aboriginal or Torres Strait Islanders, compared with 501 who identified in the 1991 census, a 69.06% increase over the period.

Labour force

The 1996 census showed 2381 people were unemployed in a labour force of 22 670, an unemployment rate of 10.5%. This was a slight increase from 1991, when the unemployment rate was 10.34%. The workforce participation rate in 1996 was 60.43%.

In 1991, major industries in the LGA recorded at the census were classified by the ABS as wholesale and retail trade, manufacturing, and community services. Agriculture, forestry, fishing and hunting employed 528 people (2.7%).

In 1996, this pattern of employment by industry remained, with manufacturing employing about 5% more in this LGA than were employed in either New South Wales or the Lower North East study area in 1996. The agriculture, forestry and fishing sector employed 1.86% of the LGA labour force in 1996.

The timber industry in 1996 employed 82 people, five in forestry and logging, 13 in sawmilling and timber dressing and 64 in other wood product manufacturing. This was a decrease from 1991 when 95 people were employed in the industry. The most significant decrease was in

sawmilling and timber dressing. In 1991, three people were employed in forestry and logging, 33 in sawmilling and timber dressing and 59 in other wood product manufacturing.

Tradespersons and related workers were the largest occupational group recorded at the 1996 census (3197 people), followed by intermediate clerical, sales and service workers (3036) and professionals (2860).

Most of the labour force was aged between 35 and 44 years and there were more people aged 55 to 64 years out of the labour force than in the labour force. At the 1996 census, 227 people over the age of 65 years were recorded in the workforce.

Median weekly individual income in the Maitland LGA in 1996 was \$294. Median weekly household income for the same period was \$638.

Education

The census showed 5712 children attended primary schools and 3943 children attended secondary schools in 1996. This was increase in enrolments from 1991 when 5426 children attended primary school and 3696 children attended secondary school.

In 1991, 14 717 people were recorded as having left school aged 15 years or less. In 1996, there were 14 942 in this group.

The number attending further educational institutions increased over the intercensal period from 2899 people in 1991 to 2925 in 1996. The number recorded as having qualifications rose by 1535 people from 13 277 to 14 812 over the same period. The 1996 census showed 2240 people held tertiary qualifications. In both the 1991 and 1996 censuses, the ABS recorded engineering as the area where the greatest number held qualifications, with business and administration and health next at both censuses.

Health

There is one hospital in the LGA, three community health services, three early child health centres and a women's health centre.

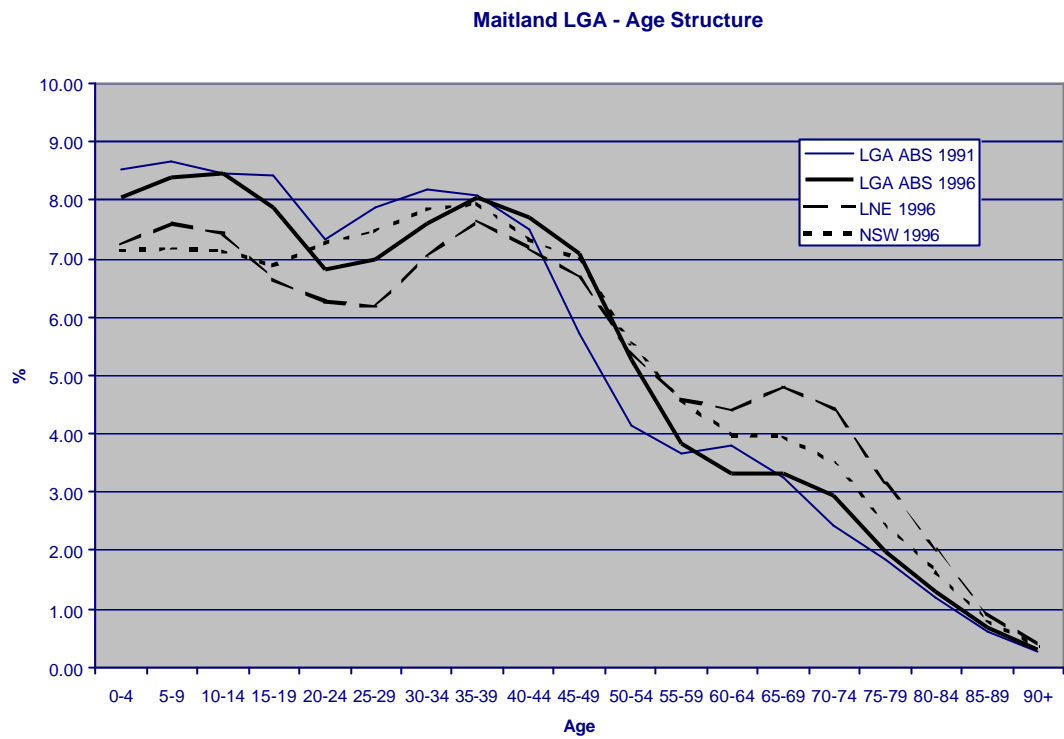
Maitland Hospital has 115 beds, and provides accident and emergency services, general surgical and medical facilities, an up-to-date maternity section with a level two nursery, and rehabilitation and mental health units.

Housing

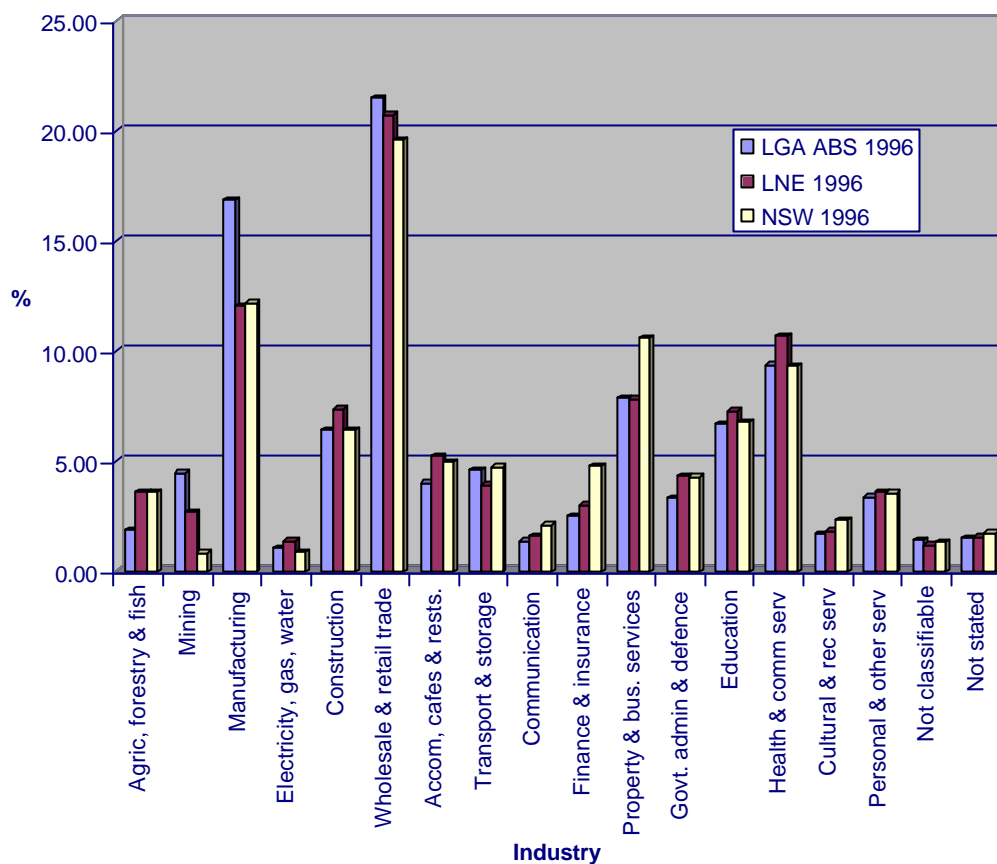
Separate houses were identified as the most popular occupied dwelling type at both the 1991 and 1996 censuses, with the number of dwellings of this type increasing by 1802 over the intercensal period. The number of unoccupied separate houses increased by 182 over the same period. The number of semi-detached dwellings and townhouses, flats, units and apartments increased over the intercensal period.

The 1996 census showed 7177 dwellings were owned, 5026 dwellings were being purchased and 4492 dwellings were being rented. In 1996, the median home repayment was \$780 per month and the median rent was \$115 per week.

The average household size in 1996 was 2.8 people.



Maitland LGA - Employment by Industry



Muswellbrook LGA

Muswellbrook LGA covers 3401 square kilometres in the south western region of the Lower North East study area. The major population centres in the LGA include Muswellbrook and Denman.

Major industries contributing to the economy of the LGA include power generation, coal mines, horse studs, wine production and tourism.

Protected areas in the Muswellbrook LGA include the Goulburn River National Park and the Wollemi National Park.

The Muswellbrook LGA has no airport but has links to the New England highway.

Population

The population of the Muswellbrook LGA increased by 435 (2.87%) between the 1991 and 1996 censuses to 15 562 people in 1996. The median age for the LGA increased from 29 to 31 years in 1996, making it lower than the median for NSW (34 years) and the study area (36). The number of people under 15 years decreased by 79 (1.92%) between 1991 and 1996. The

Muswellbrook LGA had a young population (people under the age of 35 years) consistently around 1 to 1.5% higher than that in the Lower North East study area. The over 55 years age group in the LGA showed a steady decline, whereas the study area and New South Wales showed an increase in this group. The 1996 dependency ratio calculated by the ABS was 34.04%.

In 1996, 89.2% of the population were Australian-born and most were of Anglican faith and English-speaking. At the 1996 census 387 people, or 2.49%, identified as Aboriginal or Torres Strait Islanders, compared with 270 who identified in the 1991 census, a 43.33% increase over the period.

Labour force

The 1996 census showed 661 people were unemployed in a labour force of 7196 people with an unemployment rate of 9.2%. This was a slight increase from 1991 when the unemployment rate was 8.76%. The workforce participation rate in 1996 was 62.39%.

In 1991, major industries in the LGA recorded at the census were classified by the ABS as mining; wholesale and retail trade; community services; and electricity, gas and water. Agriculture, forestry, fishing and hunting employed 616 people (9.2%).

In 1996, major industries of employment were mining; wholesale and retail trade; and agriculture, forestry and fishing. The decrease in prominence of electricity, gas and water would suggest downsizing by agencies such as 'Northpower'. Agriculture, forestry and fishing comprised 9.98% of the labour force.

The timber industry in 1996 employed 37 people, five in forestry and logging, 18 in sawmilling and timber dressing and 14 in other wood product manufacturing. This was a decrease from 1991 when 45 people were employed in the industry. There were significant changes in all categories, with declines in forestry and logging and sawmilling and timber dressing and an increase in other wood product manufacture. In 1991, 13 people were employed in forestry and logging, 28 in sawmilling and timber dressing and four in other wood product manufacturing.

Tradespersons and related workers were the largest occupational group recorded at the 1996 census (1192 people), followed by intermediate production and transport workers (1088) and labourers and related workers (857).

Most of the labour force was aged between 25 and 34 years and there were almost equal numbers of people aged 55 to 64 years out of the labour force and in the labour force. At the 1996 census, 114 people over the age of 65 years were recorded in the workforce.

Median weekly individual income in the Muswellbrook LGA in 1996 was \$350. Median weekly household income for the same period was \$735.

Education

The census showed 1850 children attended primary schools and 1131 children attended secondary schools in 1996. This was increase in the primary school enrolments from 1991

when 1735 children attended school, and a slight decrease in children attending secondary school from 1138 in 1991.

In 1991, 4565 people were recorded as having left school aged 15 years or less. In 1996, there were 4280 people in this group.

The number attending further educational institutions decreased over the intercensal period from 870 people in 1991 to 674 in 1996. The number of people recorded as having qualifications rose by 458 people from 4246 to 4704 over the same period. The 1996 census showed 561 people held tertiary qualifications. In both the 1991 and 1996 censuses, the ABS recorded engineering as the area where the greatest number held qualifications, with business and administration and health next at both censuses.

Health

Muswellbrook Hospital has 64 beds, 18 of which are for a public nursing home. Services provided by the hospital include obstetrics, accident and emergency, high dependency unit, medical and surgical care, and paediatric and palliative care. A community health centre and child health centre is also located in the grounds of the hospital.

The other hospital in the LGA is located at Denman. This hospital has 15 beds and provides a 24-hour accident and emergency service, acute beds, six geriatric beds, a children's ward and palliative care. Denman also has a community health centre and child health centre.

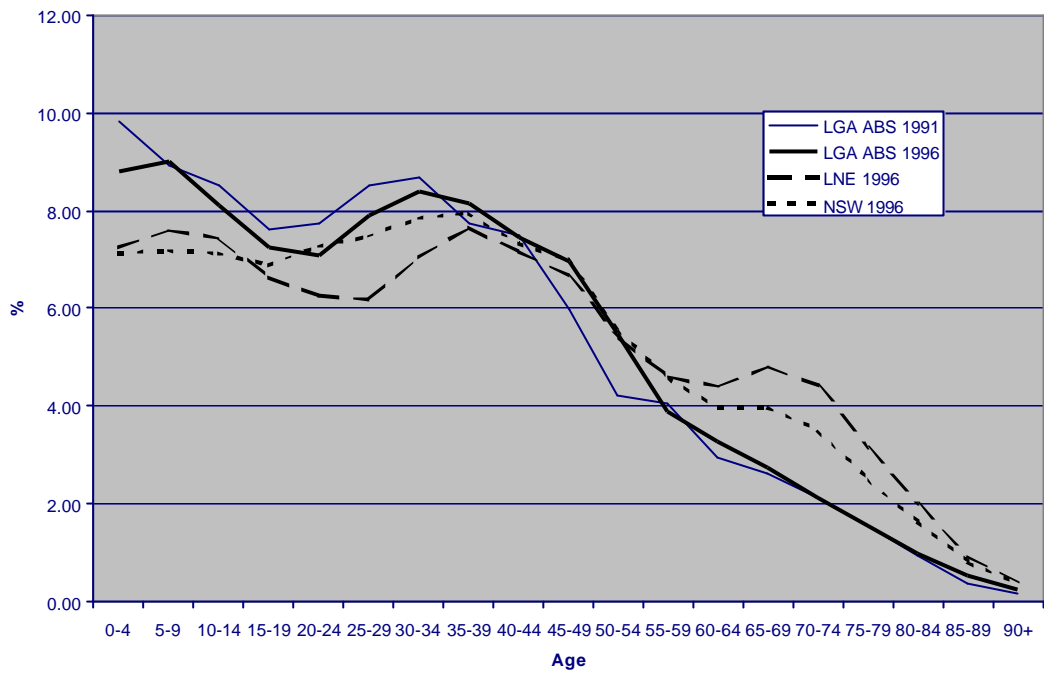
Housing

Separate houses were identified as the most popular occupied dwelling type at both the 1991 and 1996 censuses, with the number of dwellings of this type increasing by 362 over the intercensal period. The number of unoccupied separate houses increased by 28 over the same period. The number of semi-detached dwellings and townhouses, flats, units and apartments increased over the intercensal period.

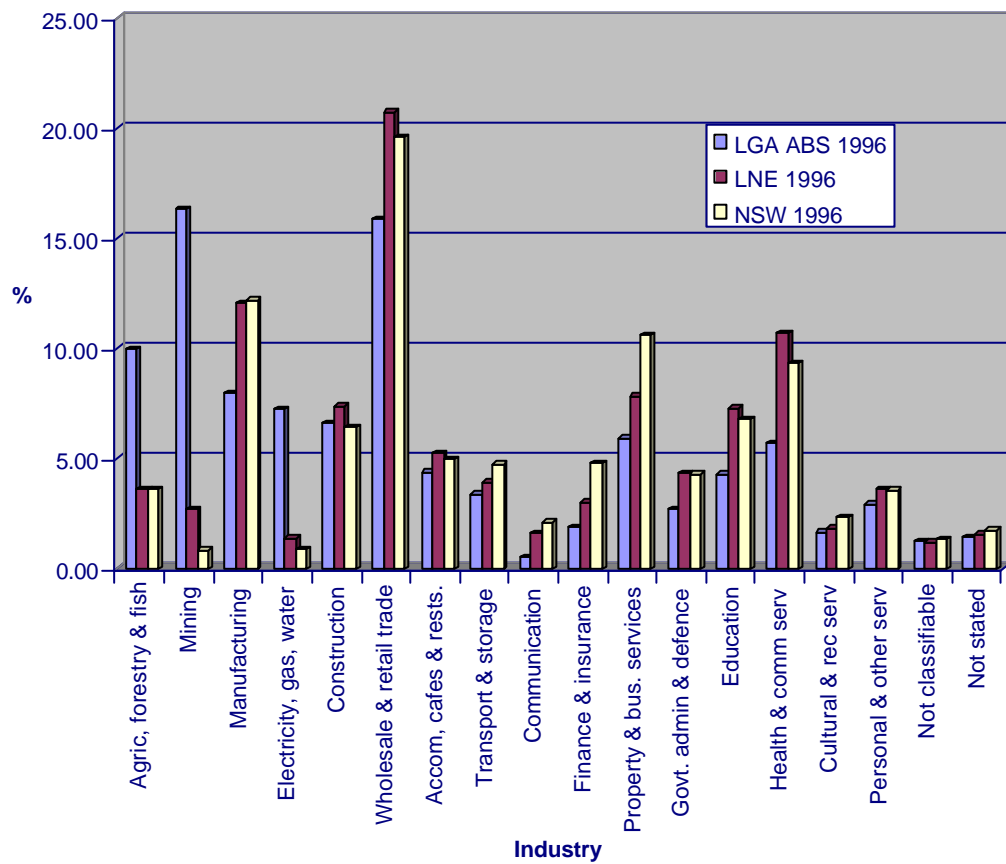
The 1996 census showed 1849 dwellings were owned, 1384 dwellings were being purchased and 1537 dwellings were being rented. In 1996, the median mortgage repayment was \$867 per month and the median rent was \$100 per week.

The average household size in 1996 was 2.8 people.

Muswellbrook LGA - Age Structure



Muswellbrook LGA - Employment by Industry



Nambucca LGA

Nambucca LGA covers 1489 square kilometres in the north eastern region of the Lower North East study area. The major population centres in the LGA include Nambucca Heads, Macksville, Bowraville, Scotts Head, Valla Beach and Hyland Park.

Major industries contributing to the economy of the LGA include meat packaging, light steel manufacturing, banana growing, forestry, cattle grazing and vegetable growing.

The major protected area in the Nambucca LGA is the Bowraville Nature Reserve.

The Nambucca LGA has no airport but has links to the Pacific highway.

Population

The population of the Nambucca LGA increased by 916 (5.49%) in the 1991 census to 17 610 people in the 1996 census. The median age for the LGA increased from 37 to 39 years in 1996, making it higher than the median for New South Wales (34 years) and the study area (36). The number of people less than 15 years increased by 86 (2.17%) between 1991 and 1996. This young population is reflected in the Nambucca LGA age structure chart. The chart also shows there was a greater exodus of people aged 15 to 29 (around 3% more) and there were around 1% to 1.5% more people aged 55 to 74 than in the Lower North East study area or New South Wales. This exodus of young people would be influenced by the high unemployment rate in the LGA. The 1996 dependency ratio calculated by the ABS was 42.43%.

In 1996, 87.3% of the population were Australian-born and most were of Anglican faith and English-speaking. At the 1996 census 784 people, or 4.45% of the population, identified as Aboriginal and/or Torres Strait Islanders, compared with 567 who identified in the 1991 census, a 38.27% increase over the period.

Labour force

The 1996 census showed 1228 people were unemployed in a labour force of 6362 people, an unemployment rate of 19.3%. This was a slight increase from 1991 when the unemployment rate was 18.38%. The workforce participation rate in 1996 was 46.86%.

In 1991 major industries in the LGA, recorded at the census, were classified by the ABS as wholesale and retail trade, community services, and manufacturing. Agriculture, forestry, fishing and hunting employed 651 people (13.3%).

In 1996, the main industries in Nambucca LGA were wholesale and retail trade; agriculture, forestry and fishing; and manufacturing. Agriculture, forestry and fishing employed 11.47% of the labour force.

The timber industry in 1996 employed 128 people, 29 in forestry and logging, 80 in sawmilling and timber dressing and 19 in other wood product manufacturing. This was a decrease from 1991 when 177 people were employed in the industry. There were significant declines in all categories between 1991 and 1996. In 1991, 40 people were employed in forestry and logging, 100 in sawmilling and timber dressing and 37 in other wood product manufacturing.

Intermediate clerical, sales and service workers were the largest occupational group recorded at the 1996 census (747 people), followed by professionals (691) and managers and administrators (658).

Most of the labour force was aged between 35 and 44 years and there were more people aged 55 to 64 years and 15 to 19 years out of the labour force than in the labour force. At the 1996 census, 154 people over the age of 65 years were recorded in the workforce.

Median weekly individual income in the Nambucca LGA in 1996 was \$208. Median weekly household income for the same period was \$408.

Education

The census showed 1918 children attended primary schools and 1457 children attended secondary schools in 1996. This was increase in the enrolments from 1991 when 1802 children attended primary school and 1092 children attended secondary school.

In 1991, 5981 people were recorded as having left school aged 15 years or less. In 1996, there were 5950 in this group.

The number attending further educational institutions increased over the intercensal period from 513 people in 1991 to 543 in 1996. The number of people recorded as having qualifications rose by 683 people from 4305 to 4988 over the same period. The 1996 census showed 652 people held tertiary qualifications. In both the 1991 and 1996 censuses, the ABS recorded engineering as the area where the greatest number held qualifications, with business and administration and health next at both censuses. Education was equal in popularity to health in 1996.

Health

Nambucca LGA has full range of home and community services for the disabled and frail and a community health centre at Macksville. Services and facilities for the elderly include two retirement/nursing homes. A 56-bed hospital in Macksville provides accident and emergency services as well as general medical and surgical facilities. There are three early childhood health centres located at Macksville, Bowraville and Nambucca Heads and an Aboriginal health centre at Bowraville.

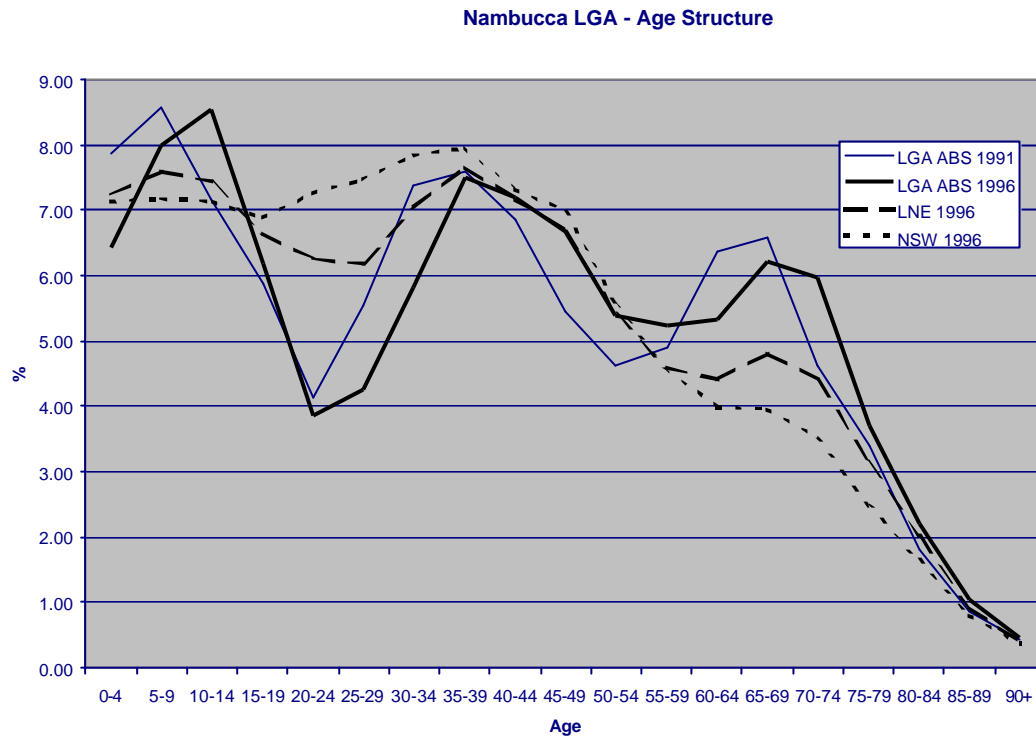
ABS demographic statistics for 1995 showed Nambucca LGA had one of the highest birth rates in the study area with 13.5 births per 1000. It had a death rate of 10.2 deaths per 1000, and three times more hospital admissions for people aged 0–4 than New South Wales in 1995–96. Unlike other LGAs in the study area, this LGA had more hospital admissions due to diseases of the circulatory system than any other cause.

Housing

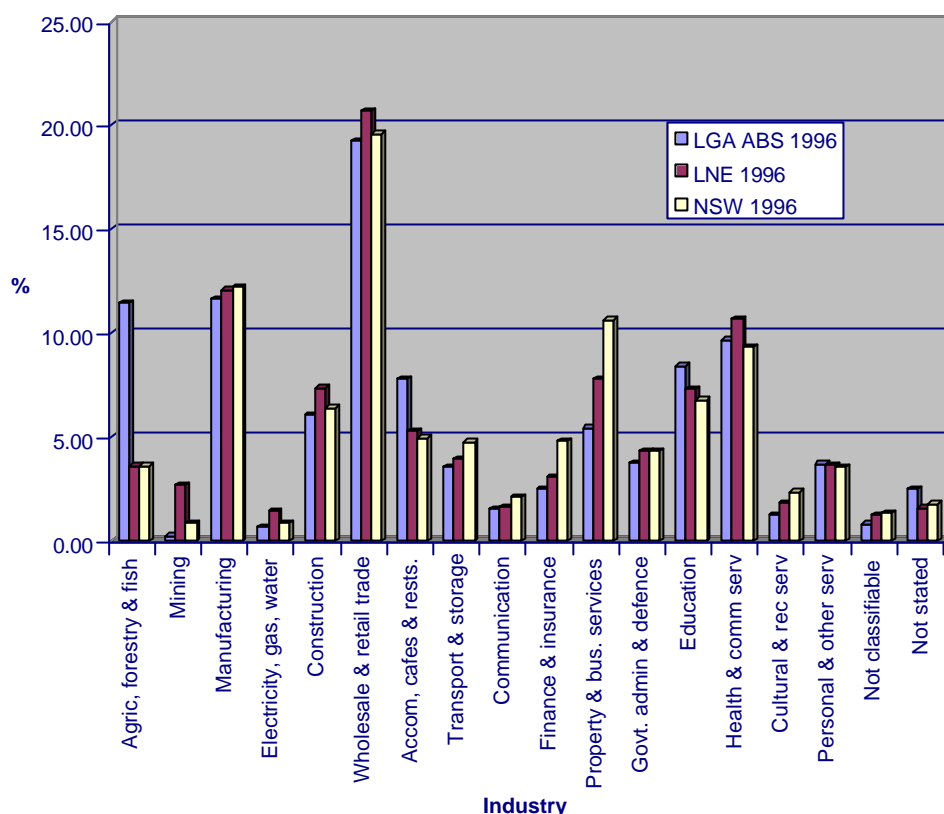
Separate houses were identified as the most popular occupied dwelling type at both the 1991 and 1996 censuses, with the number of dwellings of this type increasing by 487 over the intercensal period. The number of unoccupied separate houses increased by 143 over the

same period. The number of semi-detached dwellings and townhouses, flats, units and apartments increased over the intercensal period.

The 1996 census showed 3294 dwellings were owned, 1142 dwellings were being purchased and 1663 dwellings were being rented. In 1996, the median housing loan repayment was \$650 per month and the median rent was \$100 per week. The average household size in 1996 was 2.5 people.



Nambucca LGA - Employment by Industry



Newcastle LGA

Newcastle LGA covers 182 square kilometres in the south eastern region of the Lower North East study area. Newcastle is the largest non-capital city in Australia. The major population centres in the LGA include Newcastle and Minmi.

Major industries contributing to the economy of the LGA include iron smelting and a steelworks, grape growing, education, and tourism focused on fishing and four-wheel driving. The LGA is also a focal service centre for neighbouring regions.

The major protected areas in the Newcastle LGA include the Hexham Swamp Nature Reserve and the Kooragang Nature Reserve.

The Newcastle LGA has an airport and heliport and has links to the Pacific highway, New England highway and Sydney–Newcastle freeway.

Population

The population of the Newcastle LGA increased by 2377 (1.81%) between the 1991 and 1996 censuses, reaching 133 686 people in 1996. The median age for the LGA increased from 34 to 35 years in 1996, making it greater than the median for NSW (34 years) but lower than the median for the study area (36). The number of people under 15 years increased by 62 (0.26%) between 1991 and 1996. The age structure chart for the LGA shows it has an almost

contradictory chart for its population aged 0 to 29 years when compared with the population curves for New South Wales and the Lower North East study area, having around 2% fewer in the group aged 0 to 15 years and around 2% more aged 20 to 29 years. The remainder of the population structure closely parallels that for the study area and for New South Wales. The 1996 dependency ratio calculated by the ABS was 21.29% for the inner Newcastle LGA and 34.77% for the remainder of the LGA. Inner Newcastle had the lowest dependency ratio in the study area.

In 1996, 84.4% of the population were Australian-born and most were of Anglican faith and English-speaking. At the 1996 census 1880 people or 1.41% of the population identified as Aboriginal and/or Torres Strait Islanders, compared with 1182 who identified in the 1991 census; a 59.05% increase over the period.

Labour force

The 1996 census showed 7543 people were unemployed in a labour force of 60 815, an unemployment rate of 12.4%. This was a slight decrease from 1991 when the unemployment rate was 12.57%. The workforce participation rate in 1996 was 55.26%.

Major industries of employment in the LGA recorded at the 1991 census were classified by the ABS as community services, wholesale and retail trade, and manufacturing. Agriculture, forestry, fishing and hunting employed 284 people (0.5%).

The 1996 employment by industry census figures showed employment structures changed over the intercensal period. Wholesale and retail trade was the major employer, followed by manufacturing, and health and community services. Agriculture, forestry and fishing employed 0.41% of the labour force.

The timber industry in 1996 employed 128 people, 29 in forestry and logging, 80 in sawmilling and timber dressing and 19 in other wood product manufacturing. This was a decrease from 1991 when 177 people were employed in the industry. There were significant declines in all categories between 1991 and 1996. In 1991, 40 people were employed in forestry and logging, 100 in sawmilling and timber dressing and 37 in other wood product manufacturing.

Professionals were the largest occupational group recorded at the 1996 census (10 618 people), followed by intermediate clerical, sales and service workers (9013) and tradespersons and related workers (7110).

Most of the labour force was aged between 25 and 34 years and there were one-third more people aged 55 to 64 years out of the labour force than in the labour force. At the 1996 census, 648 people over the age of 65 years were recorded in the workforce.

Median weekly individual income in the Newcastle LGA in 1996 was \$296 in the inner LGA and \$263 in the remainder. Median weekly household income for the same period was \$556 in the inner LGA and \$528 in the remainder.

Education

The census showed 10 580 children attended primary schools and 7202 children attended secondary schools in 1996. This was an increase in enrolments from 1991 when 9752 children attended primary school and 7157 children attended secondary school.

In 1991, 45 788 people were recorded as having left school aged 15 years or less. In 1996, there were 42 466 in this group.

The number attending further educational institutions increased over the intercensal period from 12 269 people in 1991 to 13 476 people in 1996. The number of people recorded as having qualifications rose by 4024 people from 41 622 to 45 646 over the same period. The 1996 census showed 10 573 people held tertiary qualifications. In both the 1991 and 1996 censuses, the ABS recorded engineering as the area where the greatest number held qualifications, with business and administration, and health next at both censuses.

Health

Newcastle LGA is well provided with health services. It has three public hospitals and four private hospitals. Of the public hospitals, John Hunter has the most beds at around 600, followed by Newcastle Mater Misericordiae with 170 and Royal Newcastle with 120. These hospitals provide a comprehensive range of medical and surgical facilities.

Christo Road Private hospital has 65 beds and its special areas are surgical, medical and obstetrics. Lingard Private Hospital has 120–130 beds and specialises in psychiatric patients and chemotherapy; it has a sports medicine centre for rehabilitation of workers. It also provides general medical and surgical facilities. Hunter Valley Private Hospital has 40 beds and is primarily a surgical hospital. It also has a 12 bed rehabilitation unit and a musculo-skeletal centre.

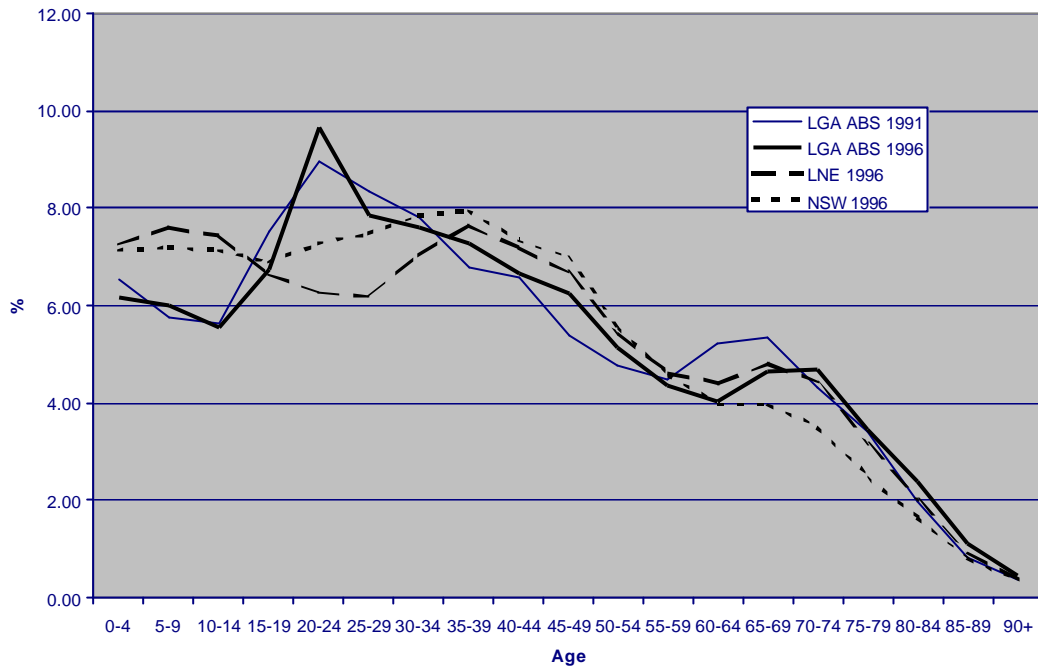
There are five child health centres in the LGA and two community health centres. Also located in the LGA are the Awabakal Aboriginal health service and a women's health service.

Housing

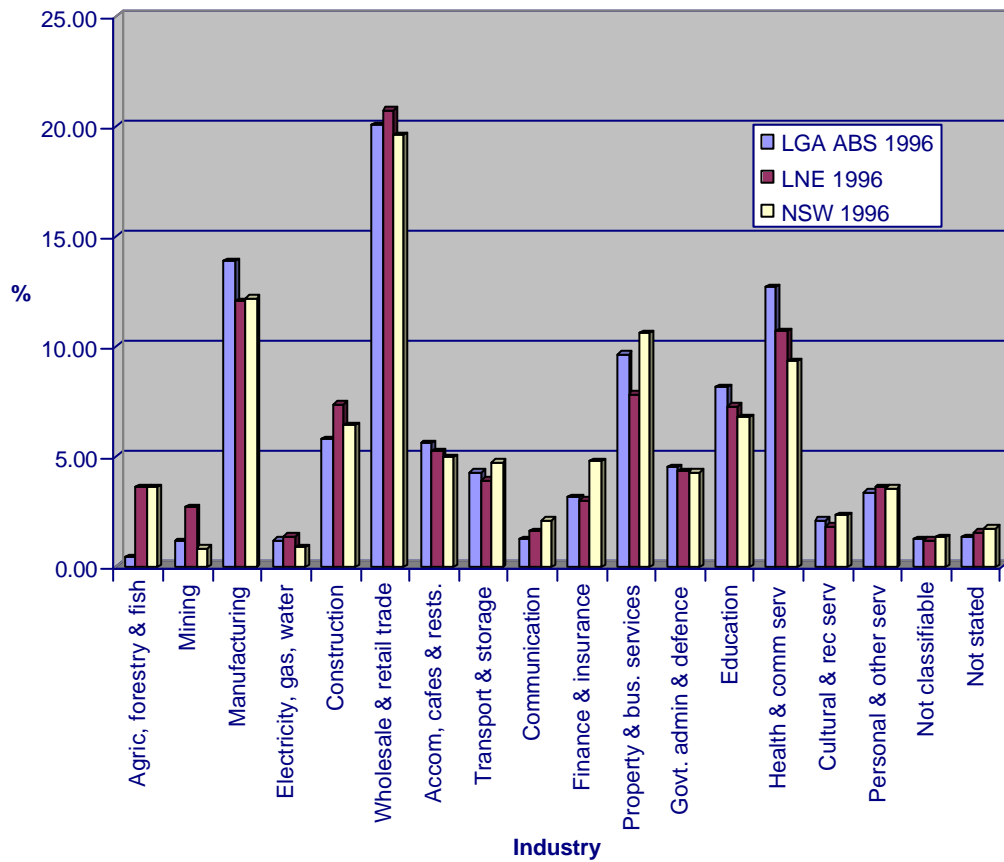
Separate houses were identified as the most popular occupied dwelling type at both the 1991 and 1996 censuses, with the number of dwellings of this type increasing by 855 over the intercensal period. The number of unoccupied separate houses increased by one over the same period. The number of semi-detached dwellings and townhouses, flats, units and apartments increased over the intercensal period.

The 1996 census showed 22 812 dwellings were owned, 10 991 dwellings were being purchased and 17 127 dwellings were being rented. In 1996, the median housing repayment was \$953 per month in the inner LGA area and \$760 per month in the outer LGA area. Median rent was \$140 per week in the inner LGA and \$125 in the outer LGA. The average household size in 1996 was 2.4 people.

Newcastle LGA - Age Structure



Newcastle LGA - Employment by Industry



Nundle LGA

Nundle LGA covers 1600 square kilometres in the central western region of the Lower North East study area. The only major population centre in the LGA is Nundle.

Major industries contributing to the economy of the LGA are forestry related, and tourism is developing.

The major protected area in the Nundle LGA is the Barrington Tops National Park.

The Nundle LGA has not got an airport but it has links to the New England highway.

Population

The population of the Nundle LGA increased by 18 (1.36%) between the 1991 and 1996 censuses reaching 1337 people in 1996. In both 1991 and 1996, Nundle LGA had the smallest population in the study area. The median age for the LGA increased from 37 to 40 years in 1996, making it higher than the median for New South Wales (34 years) and for the study area (36). The number of people under 15 years decreased by 16 (5.47%) between 1991 and 1996, and this is reflected in Nundle LGA having the lowest proportion of people in this age group in the study area in both 1991 and 1996. The Nundle age structure chart shows the LGA had a much lower proportion of people aged 15 to 29 than were in the Lower North East study area and New South Wales (3% to 4.5% lower). While the Nundle LGA age structure generally followed the pattern for the Lower North East study area, there were 3% fewer people aged 15 to 29 years in 1991 increasing to 4% in 1996. This may have been influenced by an increasingly bad unemployment situation in the LGA. The LGA also had a higher proportion of people aged between 40 and 54 years than were found in New South Wales or the Lower North East. The 1996 dependency ratio calculated by the ABS was 33.56%.

In 1996, 87.3% of the population were Australian-born and most were of Anglican faith and English-speaking. At the 1996 census, 49 people or 3.66% of the population identified as Aboriginal and/or Torres Strait Islanders, compared with 33 who identified in the 1991 census, a 48.5% increase over the period.

Labour force

The 1996 census showed 71 people were unemployed in a labour force of 603 with an unemployment rate of 11.8%. This was a slight increase from 1991 when the unemployment rate was 11.18%. The workforce participation rate in 1996 was 56.83%.

In 1991, major industries in the LGA recorded at the census were classified by the ABS as agriculture, forestry, fishing and hunting; community services; and wholesale and retail trade. Agriculture, forestry, fishing and hunting employed 242 people (41.3%).

In 1996, agriculture, forestry and fishing remained the major industry, employing 43.56% of the workforce. Wholesale and retail trade and manufacturing were next largest industries of employment.

Managers and administrators were the largest occupational group recorded at the 1996 census (175 people), followed by labourers and related workers (74) and professionals (60).

Most of the labour force was aged between 45 and 54 years and there were twice as many people aged 15 to 19 years out of the labour force as in the labour force. At the 1996 census, 41 people over the age of 65 years were recorded in the workforce.

Median weekly individual income in the Nundle LGA in 1996 was \$218. Median weekly household income for the same period was \$447.

Education

The census showed 137 children attended primary schools and 91 children attended secondary schools in 1996. This was a decrease in enrolments from 1991 when 141 children attended primary school and 95 children attended secondary school.

In 1991, 440 people were recorded as having left school aged 15 years or less. In 1996, there were 423 in this group.

The number attending further educational institutions decreased over the intercensal period from 52 people in 1991 to 45 in 1996. The number of people recorded as having qualifications rose by 52 from 394 to 446 over the same period. The 1996 census showed 56 people held tertiary qualifications. In both the 1991 and 1996 censuses, the ABS recorded engineering as the area where the greatest number held qualifications, with business and administration and agriculture and related fields next at both censuses.

Health

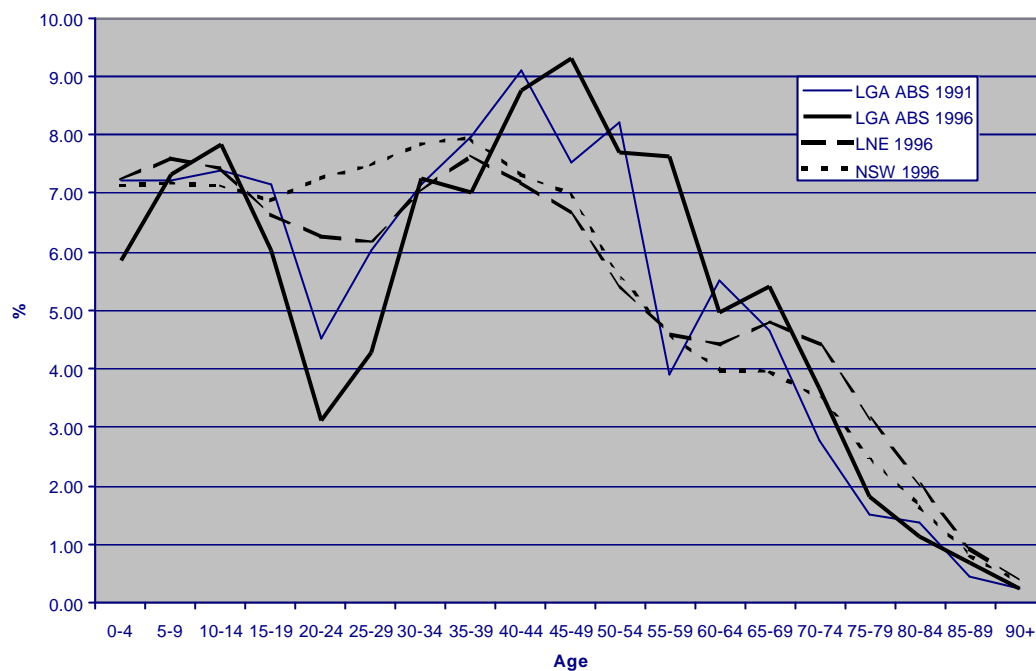
Nundle has a community health service. For other health services Nundle residents would use a full range of services in Tamworth.

Housing

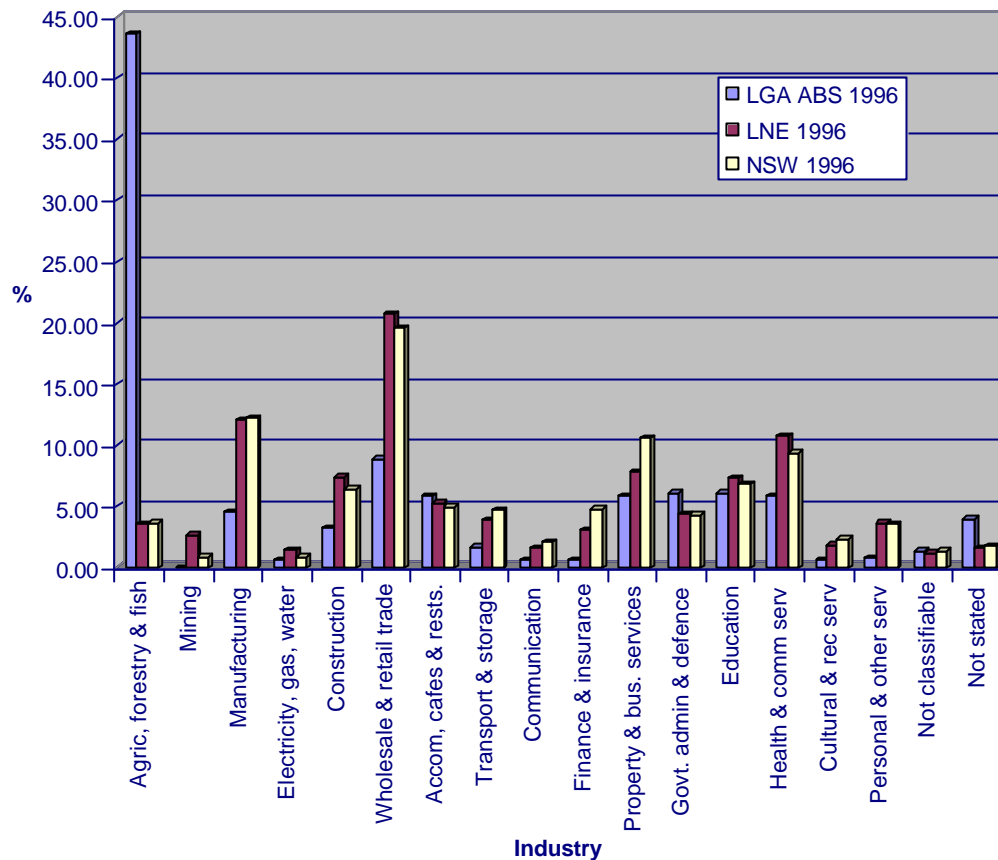
Separate houses were identified as the most popular occupied dwelling type at both the 1991 and 1996 censuses, with the number of dwellings of this type increasing by 38 over the intercensal period. The number of unoccupied separate houses decreased by eight over the same period. The number of semi-detached dwellings and townhouses, flats, units and apartments decreased over the intercensal period, but this is likely to be due to changes in classification.

The 1996 census showed 294 dwellings were owned, 78 dwellings were being purchased and 87 dwellings were being rented. In 1996, the median housing repayment was \$460 per month and the median rent was \$50 per week. These were the lowest rates in the study area. The average household size in 1996 was 2.6 people.

Nundle LGA - Age Structure



Nundle LGA - Employment by Industry



Port Stephens LGA

Port Stephens LGA covers 857 square kilometres in the south eastern region of the Lower North East study area. Major population centres in the LGA include Raymond Terrace, Nelson Bay, Lemon Tree Passage, Medowie, Salamander Bay, Soldiers Point, Corlette, Anna Bay, Fingal Bay, Karuah, Brandy Hill, Boat Harbour, Seaham, Hinton and Wallalong.

Major industries contributing to the economy of the LGA are tourism, commercial fishing, aluminium smelting, defence, light industries, commercial and retailing, and rural industries.

The major protected areas in the Port Stephens LGA include Kooragang Nature Reserve, Morfats Swamp Nature Reserve, Seaham Swamp Nature Reserve, Snapper Island Nature Reserve and Tomaree National Park.

The Port Stephens LGA has an airport at Williamstown and it has links to the Pacific highway.

Population

The population of the Port Stephens LGA increased by 7581 (17.3%) between the 1991 and 1996 censuses reaching 51 288 people in 1996. This was the highest population growth of all

LGAs in the study area. The median age for the LGA increased from 32 to 34 years in 1996, making it equal to the median for NSW (34 years) and lower than the median for the study area (36). The number of people under 15 years increased by 1478 (5.47%) between 1991 and 1996. The Port Stephens LGA age structure closely parallels that for the Lower North East study area and NSW. The 1996 dependency ratio calculated by the ABS was 37.56%.

In 1996, 85.9% of the population were Australian-born and most were of Anglican faith and English-speaking. At the 1996 census, 991 people or 1.93% of the population identified as Aboriginal and/or Torres Strait Islanders, compared with 612 who identified in the 1991 census, a 61.93% increase over the period.

Labour force

The 1996 census showed 2500 people were unemployed in a labour force of 21 542, an unemployment rate of 11.6%. This was a slight decrease from 1991 when the unemployment rate was 12.1%. The workforce participation rate in 1996 was 55.22%.

In 1991, major industries in the LGA recorded at the census were classified by the ABS as wholesale and retail trade; community services; and public administration and defence. Agriculture, forestry, fishing and hunting employed 617 people (3.7%).

In 1996, wholesale and retail trade was still the dominant employer, followed by manufacturing and government administration and defence. The LGA had four times the number of people in the government administration and defence sector than in the Lower North East study area and New South Wales, due the Williamstown Air Base.

The timber industry in 1996 employed 161 people, 23 in forestry and logging, 11 in sawmilling and timber dressing and 127 in other wood product manufacturing. This was the same as in 1991, though employment in the categories shifted a little between the intercensal periods. In 1991, 15 people were employed in forestry and logging, 24 in sawmilling and timber dressing and 122 in other wood product manufacturing.

Tradespersons and related workers were the largest occupational group recorded at the 1996 census (3318 people), followed by intermediate clerical, sales and service workers (2935) and professionals (2531).

Most of the labour force was aged between 35 and 44 years and there were more people aged 55 to 64 years out of the labour force than in the labour force. At the 1996 census, 254 people over the age of 65 years were recorded in the workforce.

Median weekly individual income in the Port Stephens LGA in 1996 was \$278. Median weekly household income for the same period was \$567.

Education

The census showed 5710 children attended primary schools and 3521 children attended secondary schools in 1996. This was an increase from 1991 when 4900 children attended primary school and 2980 children attended secondary school.

In 1991, 14 408 people were recorded as having left school aged 15 years or less. In 1996, there were 16 193 in this group.

The number attending further educational institutions increased over the intercensal period from 2150 people in 1991 to 2516 in 1996. The number recorded as having qualifications rose by 3246 people from 13 136 to 16 382 over the same period. The 1996 census showed 2070 people held tertiary qualifications. In both the 1991 and 1996 censuses, the ABS recorded engineering as the area where the greatest number held qualifications, with business and administration next at both censuses. Health was replaced by architecture and building for third most common qualification in the 1996 census.

Health

There are no hospitals in the Port Stephens LGA, but there is a range of other health services. Nelson Bay has a recently opened 'poly clinic' which has 14 beds and 24 hour accident and emergency services. However, it has no doctors on staff and calls in local doctors only in extreme emergencies. The poly clinic has no operating theatre and so only minor surgery is done and no children under 14 are admitted to beds. The clinic treats minor illnesses and provides a range of allied health services. Child health centre and community health centres are also located in the grounds. For more serious health problems and for children under 14, locals are required to go to Newcastle.

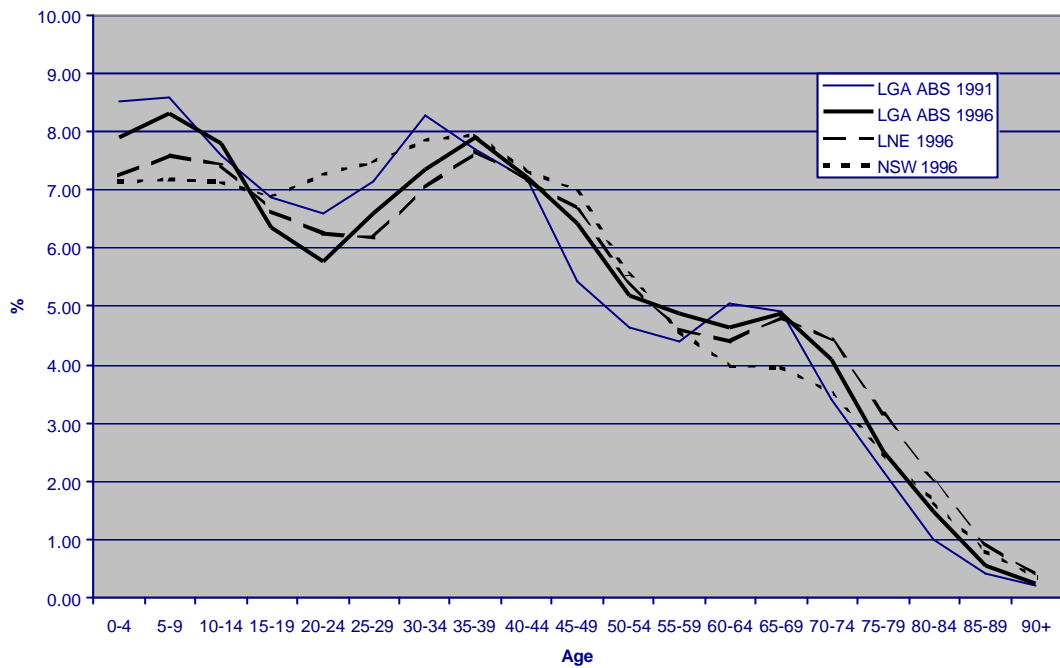
Child health services are also located in Raymond Terrace, Lemon Tree Passage, Medowie and Karuah. Community Health provides services in Raymond Terrace as well.

Housing

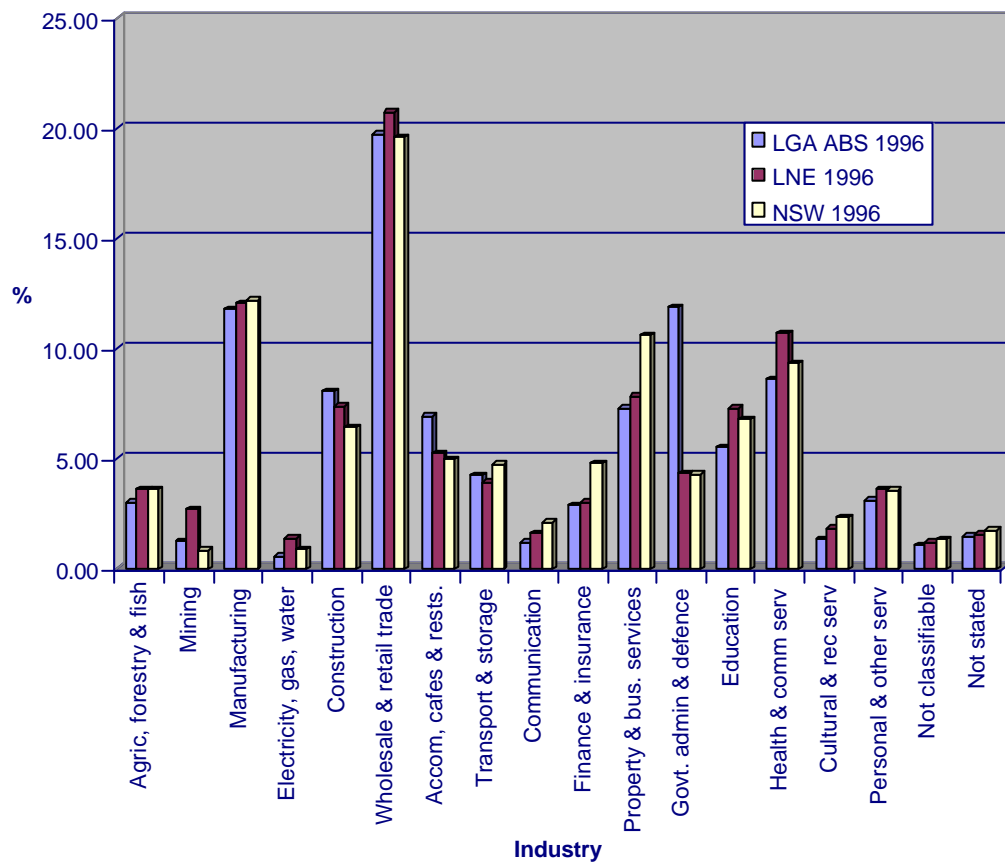
Separate houses were identified as the most popular occupied dwelling type at both the 1991 and 1996 censuses, with the number of dwellings of this type increasing by 3088 over the intercensal period. The number of unoccupied separate houses increased by 314 over the same period. The number of semi-detached dwellings and townhouses, flats, units and apartments also increased over the intercensal period.

The 1996 census showed 7766 dwellings were owned, 4199 dwellings were being purchased and 5203 dwellings were being rented. In 1996, the median housing repayment rate was \$780 per month and the median rent was \$120 per week. The average household size in 1996 was 2.7 people.

Port Stephens LGA - Age Structure



Port Stephens LGA - Employment by Industry



Scone LGA

Scone LGA covers 4038 square kilometres in the central western region of the Lower North East study area. Major population centres in the LGA include Scone, Aberdeen and Satur.

Major industries contributing to the economy of the LGA are the equine industry, cattle and sheep grazing, grain growing, viticulture and abattoirs.

Protected areas in the Scone LGA include Burning Mountain Nature Reserve, Camerons Gorge Nature Reserve, Cedar Brush Nature Reserve and Wingen Maid Nature Reserve.

The Scone LGA has an airport at Scone and it has links to the New England highway.

Population

The population of the Scone LGA increased by 147 (1.56%) between the 1991 and 1996 censuses reaching 9518 people in 1996. The median age for the LGA increased from 32 to 34 years in 1996, making it equal to the median for NSW (34 years) and lower than the median for the study area (36). The number of people under 15 years increased by 42 (1.78%) between 1991 and 1996. The Scone LGA age structure chart shows the population structure parallels that of the Lower North East study area and New South Wales, while having a slightly lower proportion of people aged 60 to 79 and around 1.5% more people aged 5 to 14 years. The 1996 dependency ratio calculated by the ABS was 36.67%.

In 1996, 90.9% of the population were Australian-born and most were of Anglican faith and English-speaking. At the 1996 census, 193 people or 2.03% of the population identified as Aboriginal and/or Torres Strait Islanders, compared with 135 who identified in the 1991 census, a 42.22% increase over the period.

Labour force

The 1996 census showed 347 people were unemployed in a labour force of 4510, an unemployment rate of 7.7%. This was a slight increase from 1991 when the unemployment rate was 6.31%. The workforce participation rate in 1996 was 63.27%.

In 1991, major industries in the LGA recorded at the census were classified by the ABS as agriculture, forestry, fishing and hunting; community services; and the wholesale and retail trade. Agriculture, forestry, fishing and hunting employed 929 people (22.3%).

Agriculture, forestry and fishing was the dominant industry of employment in 1996, employing 18.87% of the labour force — 14% more than were employed in this sector in New South Wales or the Lower North East. Other important industries of employment were manufacturing and wholesale and retail trade which employed only two-thirds of the proportion employed in NSW or the study area.

The timber industry in 1996 employed 17 people, seven in forestry and logging, 10 in sawmilling and timber dressing and none in other wood product manufacturing. This was the same as in 1991, but employment in the categories shifted a little between the intercensal periods. In 1991, no people were employed in forestry and logging, 17 in sawmilling and timber dressing and none in other wood product manufacturing.

Labourers and related workers were the largest occupational group recorded at the 1996 census (733 people), followed by tradespersons and related workers (635), and managers and administrators (532).

Most of the labour force was aged between 35 and 44 years. At the 1996 census, 115 people over the age of 65 years were recorded in the workforce.

Median weekly individual income in the Scone LGA in 1996 was \$330. Median weekly household income for the same period was \$625.

Education

The census showed 1166 children attended primary schools and 680 children attended secondary schools in 1996. There was an increase in primary school enrolments from 1991 when 1070 children were enrolled, and a slight decrease from 1991 for enrolments in secondary schools with 682 children enrolled.

In 1991, 2983 people were recorded as having left school aged 15 years or less. In 1996, there were 2822 people in this group.

The number attending further educational institutions decreased over the intercensal period from 392 people in 1991 to 163 in 1996. The number recorded as having qualifications rose by 359 people from 2321 to 2680 over the same period. The 1996 census showed 388 people held tertiary qualifications. In both the 1991 and 1996 censuses, the ABS recorded engineering as the area where the greatest number held qualifications, with business and administration, and health next at both censuses.

Health

Scone LGA has a hospital, two child health centres and a community health centre. The hospital has 36 beds; it is a general acute hospital with an accident and emergency service and provides general medical and surgical services. Community health and child health services are located in the grounds of the hospital. Another child health service is located in Aberdeen.

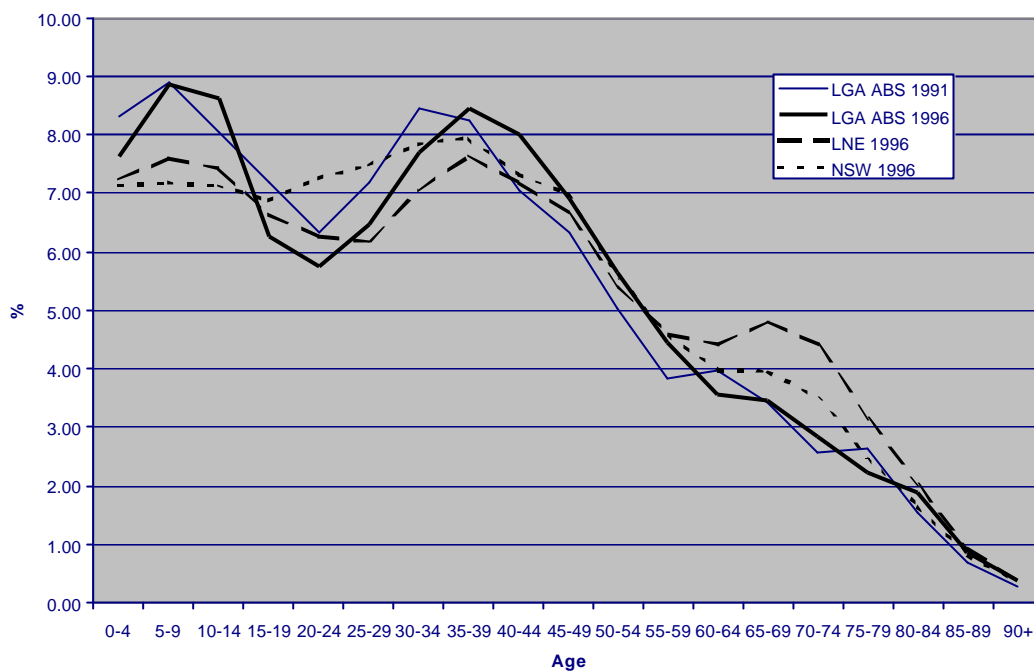
Housing

Separate houses were identified as the most popular occupied dwelling type at both the 1991 and 1996 censuses, with the number of dwellings of this type increasing by 267 over the intercensal period. The number of unoccupied separate houses increased by 68 over the same period. The number of semi-detached dwellings and townhouses also increased but flats, units and apartments decreased over the intercensal period, probably due to changes in classification of residences.

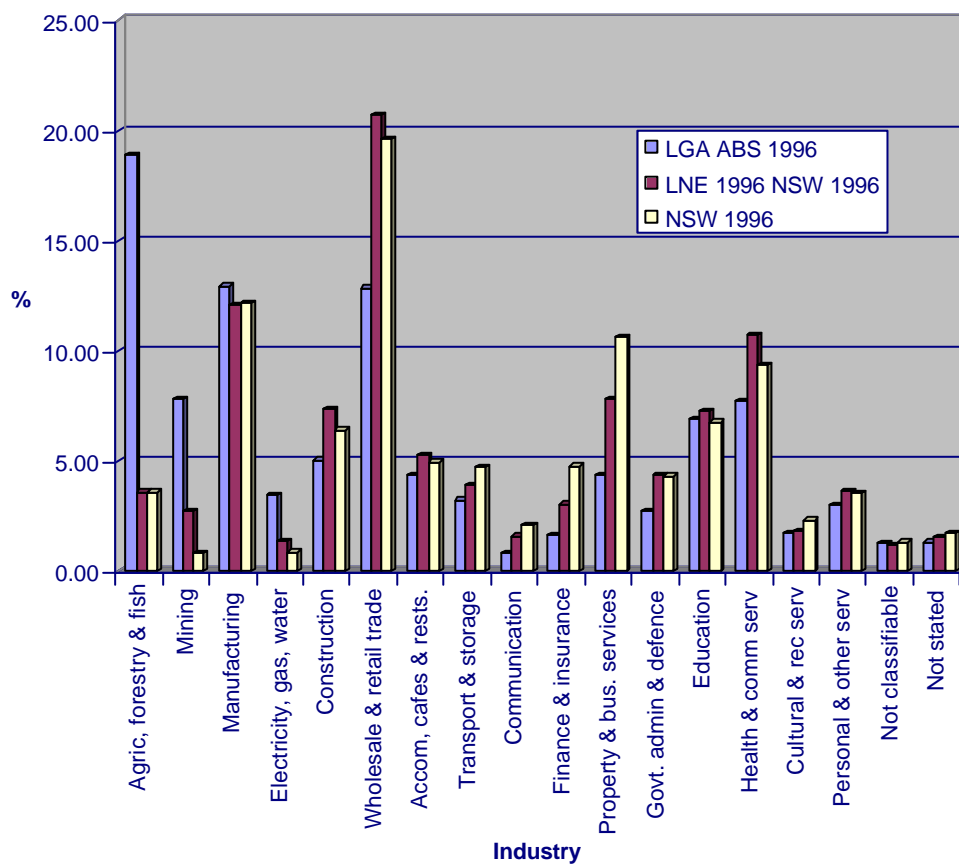
The 1996 census showed 1404 dwellings were owned, 802 dwellings were being purchased and 913 dwellings were being rented. In 1996, the median house repayment was \$759 per month and the median mortgage was \$95 per week.

The average household size in 1996 was 2.7 people.

Scone LGA - Age Structure



Scone LGA - Employment by Industry



Singleton LGA

Singleton LGA covers 4893 square kilometres in the central southern region of the Lower North East study area. Major population centres in the LGA include Singleton and Broke.

Major industries contributing to the economy of the LGA are coal mining, electrical power generation, beef cattle grazing, dairying and defence. Tourism focused on outdoor pursuits, vineyards and wineries is a developing industry.

The Singleton LGA has an airport at Singleton and it has links to the New England highway.

Population

The population of the Singleton LGA increased by 1499 (1.56%) between the 1991 and 1996 censuses reaching 20 133 people in 1996. The median age for the LGA increased from 29 to 31 years in 1996, making it below the median for NSW (34 years) and for the study area (36). The number of people under 15 years increased by 370 (7.54%) between 1991 and 1996. The Singleton LGA age structure chart shows the LGA has around 1% to 1.5% fewer people in the 55 to 84 year age category than either New South Wales or the Lower North East study area. The LGA also has around 2% more in the 0 to 9 years age group. The 1996 dependency ratio calculated by the ABS was 34.34%.

In 1996, 88.6% of the population were Australian-born and most were of Anglican faith and English-speaking. At the 1996 census, 386 people or 1.92% of the population identified as Aboriginal and/or Torres Strait Islanders, compared with 173 who identified in the 1991 census, a 123.12% increase over the period.

Labour force

The 1996 census showed 665 people were unemployed in a labour force of 9732 people, an unemployment rate of 6.8%. This was a slight decrease from 1991 when the unemployment rate was 8.12%. The workforce participation rate in 1996 was 65.49%.

In 1991, major industries in the LGA recorded at the census were classified by the ABS as mining, wholesale and retail trade, public administration and defence. Agriculture, forestry, fishing and hunting employed 675 people (8.0%).

In 1996, the major industry of employment was recorded as mining, followed by wholesale and retail trade and government administration and defence — the last is due to a major army establishment in the LGA. Agriculture, forestry and fishing employed 7.88% of the labour force in 1996.

The timber industry in 1996 employed 20 people, five in forestry and logging, nine in sawmilling and timber dressing and six in other wood product manufacturing. This was an increase from 1991, when 12 people were employed in the timber industry. Both sawmilling and timber dressing and other wood product manufacture increased employment numbers. In 1991, five people were employed in forestry and logging, four in sawmilling and timber dressing and three in other wood product manufacturing.

Tradespersons and related workers were the largest occupational group recorded at the 1996 census (1809 people), followed by intermediate production and transport workers (1479), and professionals (1056).

Most of the labour force was aged between 35 and 44 years. At the 1996 census, 173 people over the age of 65 years were recorded in the workforce.

Median weekly individual income in the Singleton LGA in 1996 was \$378, the highest in the study area and largely due to high wages in the mining industry. Median weekly household income for the same period was \$841, also the highest in the study area.

Education

The census showed 2350 children attended primary schools and 1503 children attended secondary schools in 1996. This was an increase in enrolments from 1991 when 2221 children attended primary school and 1394 children attended secondary school.

In 1991, 5636 people were recorded as having left school aged 15 years or less. In 1996, there were 5434 people in this group.

The number attending further educational institutions decreased over the intercensal period from 1088 people in 1991 to 1014 in 1996. The number of people recorded as having qualifications rose by 359 people from 5183 to 6162 over the same period. The 1996 census showed 904 people held tertiary qualifications. In both the 1991 and 1996 censuses, the ABS recorded engineering as the area where the greatest number held qualifications, with business and administration and health next at both census.

Health

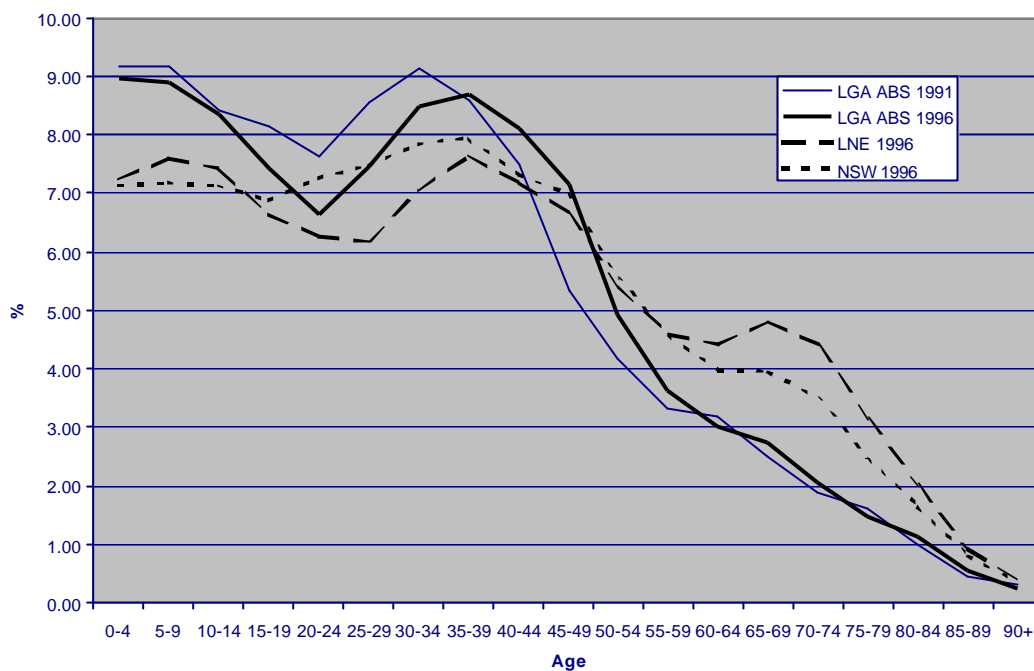
Singleton LGA has a hospital, community health centre and early childhood centre. They are all located in the town of Singleton. The hospital has 65 beds and provides accident and emergency services, as well as general surgical, medical, obstetric and paediatric care. Special services include a satellite renal dialysis unit and an obstetric early discharge program.

Housing

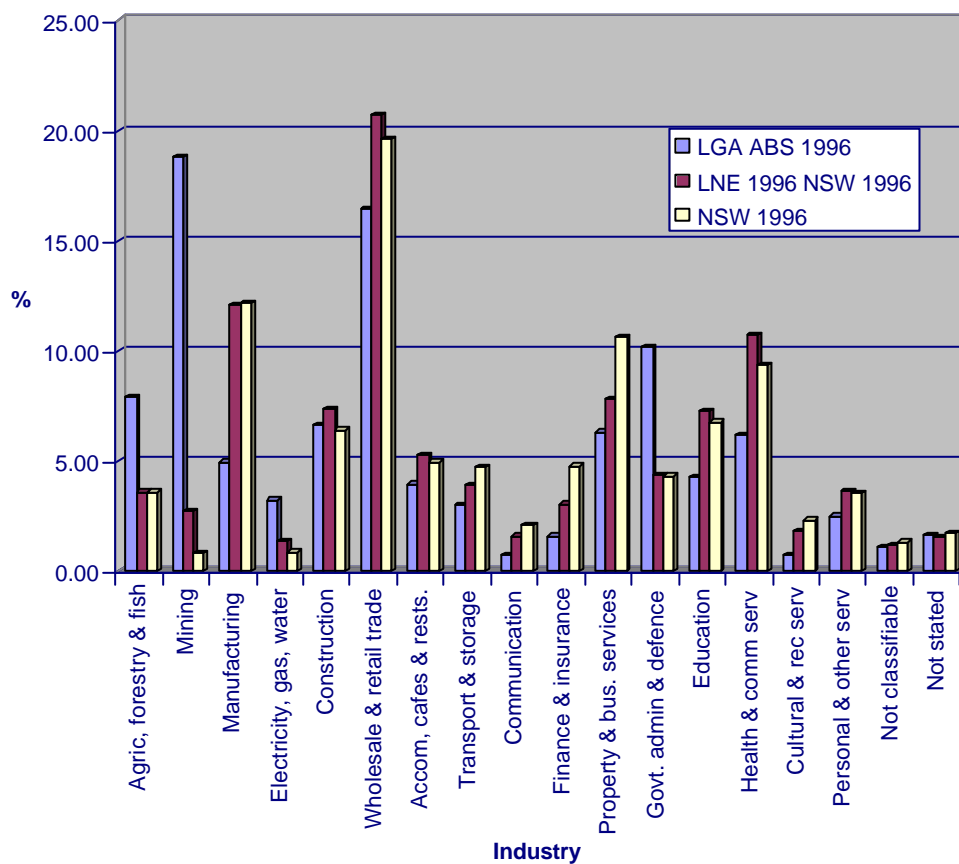
Separate houses were identified as the most popular occupied dwelling type at both the 1991 and 1996 censuses, with the number of dwellings of this type increasing by 636 over the intercensal period. The number of unoccupied separate houses decreased by ten over the same period. The number of semi-detached dwellings and townhouses also increased but flats, units and apartments decreased over the intercensal period, probably due to changes in classification of residences.

The 1996 census showed 2471 dwellings were owned, 1733 dwellings were being purchased and 1840 dwellings were being rented. In 1996, the median housing repayment was \$909 per month and the median rent was \$110 per week. The housing repayment was the highest in the study area. The average household size in 1996 was 2.9 people.

Singleton LGA - Age Structure



Singleton LGA - Employment by Industry



Uralla LGA

Uralla LGA covers 3227 square kilometres in the upper north west region of the Lower North East study area. Major population centres in the LGA include Uralla and Bundarra.

Major industries contributing to the economy of the LGA are farming and grazing, and there is also a foundry in the LGA. The area is the southern gateway to the New England region.

The major protected area in the Uralla LGA is the Mount Yarrowyck Nature Reserve.

The Uralla LGA has no airport, the closest being at Armidale, but it has links to the New England highway.

Population

The population of the Uralla LGA decreased by 9 (-0.15%) between the 1991 and 1996 census reaching 5871 people in 1996. The median age for the LGA increased from 31 years to 35 years in 1996, making it above the median for New South Wales (34 years) and below the median for the study area (36). The number of people under 15 years decreased by 85 (5.53%) between 1991 and 1996. The Uralla LGA age structure chart showed the LGA had around 2% more people aged 5 to 14 years than NSW or the Lower North East study area. The 1996 dependency ratio calculated by the ABS was 35.76%

In 1996, 91.1% of the population were Australian-born and most were of Anglican faith and English speaking. At the 1996 census, 266 people or 4.53% of the population identified as Aboriginal and/or Torres Strait Islanders, compared with 146 who identified in the 1991 census, a 82.19% increase over the period.

Labour force

The 1996 census showed 266 people were unemployed in a labour force of 2694, an unemployment rate of 9.5%. This was a slight increase from 1991 when the unemployment rate was 9.08%. The workforce participation rate in 1996 was 60.97%.

In 1991, major industries in the LGA recorded at the census were classified by the ABS as agriculture, forestry, fishing and hunting; community services; and wholesale and retail trade. Agriculture, forestry, fishing and hunting employed 675 people (27.0%).

In 1996 the major industry of employment was agriculture, forestry and fishing followed by wholesale and retail trade and education with manufacturing dropping to fourth ranking. Agriculture, forestry and fishing employed 22.47% of the labour force.

The timber industry in 1996 employed 23 people, nine in forestry and logging, eight in sawmilling and timber dressing and six in other wood product manufacturing. This is an increase from 1991 when 14 people were employed in the timber industry. There were increases in all categories between 1991 and 1996. In 1991, five people were employed in forestry and logging, five in sawmilling and timber dressing and four in other wood product manufacturing.

Managers and administrators were the largest occupational group recorded at the 1996 census (409 people), followed by professionals (351) and tradespersons and related workers (336).

Most of the labour force was aged between 35 and 44 years. There were twice as many people aged 15 to 19 out of the workforce as in the workforce. At the 1996 census, 82 people over the age of 65 years were recorded in the workforce.

Median weekly individual income in the Uralla LGA in 1996 was \$268. Median weekly household income for the same period was \$510.

Education

The census showed 723 children attended primary schools and 544 children attended secondary schools in 1996. This was an increase in enrolments from 1991 when 698 children attended primary school and 490 children attended secondary school.

In 1991, 1603 people were recorded as having left school aged 15 years or less. In 1996, there were 1608 in this group.

The number attending further educational institutions decreased over the intercensal period from 380 people in 1991 to 322 in 1996. The number recorded as having qualifications rose by 21 people from 1738 to 1759 over the same period. The 1996 census showed 430 people held tertiary qualifications. In both the 1991 and 1996 censuses, the ABS recorded engineering as the area where the greatest number held qualifications, with business and administration next. Society and culture replaced health in third position over this period.

Health

There are few health services and no hospitals in the Uralla LGA. Only community health services exist in Uralla and Bundarra. Bundarra health service also provides a 24-hour nurse based emergency service, has an outpatients service and an early childhood service. A doctor visits Bundarra one day a week.

People from Uralla requiring a greater range of health services would go to Armidale, 22 kilometres away and those from Bundarra would go to Inverell, 46 kilometres away.

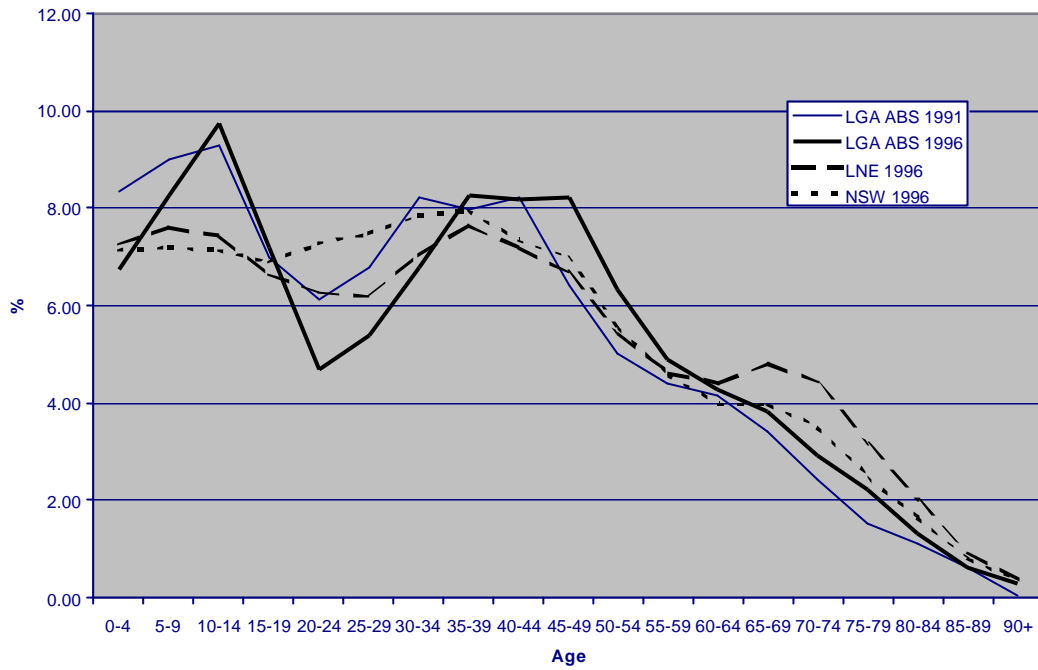
Housing

Separate houses were identified as the most popular occupied dwelling type at both the 1991 and 1996 censuses, with the number of dwellings of this type increasing by 166 over the intercensal period. The number of unoccupied separate houses increased by 88 over the same period. The number of semi-detached dwellings and townhouses, flats, units and apartments also increased over the intercensal period.

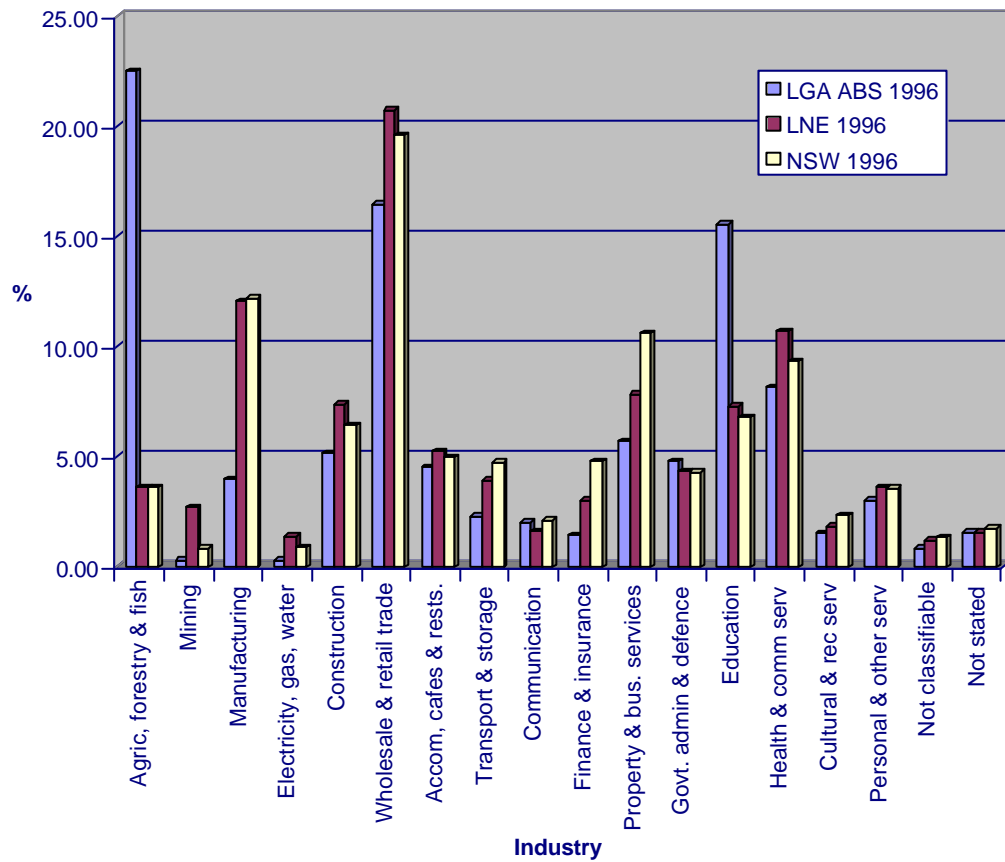
The 1996 census showed 1055 dwellings were owned, 488 dwellings were being purchased and 392 dwellings were being rented. In 1996, the median housing repayment was \$650 a month and the median rent was \$89 a week.

The average household size in 1996 was 2.7 people.

Uralla LGA - Age Structure



Uralla LGA - Employment by Industry



Walcha LGA

Walcha LGA covers 6263 square kilometres in the north west region of the Lower North East study area. The major population centre in the LGA is Walcha.

Major industries contributing to the economy of the LGA include sheep grazing for fine wool and fat lambs, cattle grazing and timber industries. Tourism focuses on national parks and historic sites.

Protected areas in the Walcha LGA include the Apsley Gorge National Park, Banda Banda Flora Reserves, Hole Creek Nature Reserve, and the Mount Seaview Nature Reserve.

The Walcha LGA has an airport at Walcha and has links to the Oxley highway.

Population

The population of the Walcha LGA decreased by 357 (-10.0%) between the 1991 and 1996 censuses, reaching 3208 people in 1996. This was the largest decline in population of all LGAs in the study area. The median age for the LGA increased from 33 to 37 years in 1996, making it above the medians for both New South Wales (34 years) and the study area (36). The number of people under 15 years decreased by 175 (20.0%) between 1991 and 1996. The Walcha LGA age chart showed that while the age profile of the LGA generally paralleled that for NSW and the Lower North East, in 1996 there was a drop of around 1% in the population aged 0 to 25 years and a gain of around 1% in people aged 45 to 54 years. The 1996 dependency ratio calculated by the ABS was 35.10%.

In 1996, 93.1% of the population were Australian-born and most were of Anglican faith and English-speaking. This was the highest proportion of Australian-born people in any LGA in the study area. 165 people, or 5.14% of the population, identified as Aboriginal and/or Torres Strait Islanders at the 1996 census, compared with 143 who identified in the 1991 census, a 15.4% increase over the period.

Labour force

The 1996 census showed 137 people were unemployed in a labour force of 1546 people, an unemployment rate of 8.9%. This was a slight decrease from 1991 when the unemployment rate was 10.5%. The workforce participation rate in 1996 was 61.57%.

In 1991, major industries in the LGA recorded at the census were classified by the ABS as agriculture, forestry, fishing and hunting; community services; and wholesale and retail trade. Agriculture, forestry, fishing and hunting employed 710 people (45.4%).

In 1996, agriculture, forestry and fishing remained the dominant industry, employing 48.77% of its labour force (higher than in any other LGA in the study area). The next largest industries, with less than half the proportion of employees, were wholesale and retail trade and manufacturing.

The timber industry in 1996 employed 90 people, 87 in forestry and logging, three in sawmilling and timber dressing and none in other wood product manufacturing. This is an increase from 1991 when 63 people were employed in the timber industry. There was a significant increase

in people employed in forestry and logging and a decrease in those employed in sawmilling and timber dressing. In 1991, 27 people were employed in forestry and logging, 36 in sawmilling and timber dressing and none in other wood product manufacturing.

Managers and administrators were the largest occupational group recorded at the 1996 census (458 people), followed by labourers and related workers (178) and tradespersons and related workers (167).

The greatest proportion of the labour force was aged between 35 and 44 years. There were more people aged 15 to 19 out of the workforce than in the workforce. At the 1996 census, 87 people over the age of 65 years were recorded in the workforce.

Median weekly individual income in the Walcha LGA in 1996 was \$264. Median weekly household income for the same period was \$479.

Education

The census showed 334 children attended primary schools and 219 children attended secondary schools in 1996. This was a decrease in enrolments from 1991 when 400 children attended primary school and 247 children attended secondary school.

In 1991, 1041 people were recorded as having left school aged 15 years or less. In 1996, there were 996 people in this group.

The number of people attending further educational institutions decreased over the intercensal period from 116 people in 1991 to 88 in 1996. The number of people recorded as having qualifications decreased by 38 people from 948 to 910 over the same period. The 1996 census showed 110 people held tertiary qualifications. In both the 1991 and 1996 censuses, the ABS recorded agriculture and related fields as the area where the greatest number held qualifications, with engineering next. Business and administration replaced health for third position over this period.

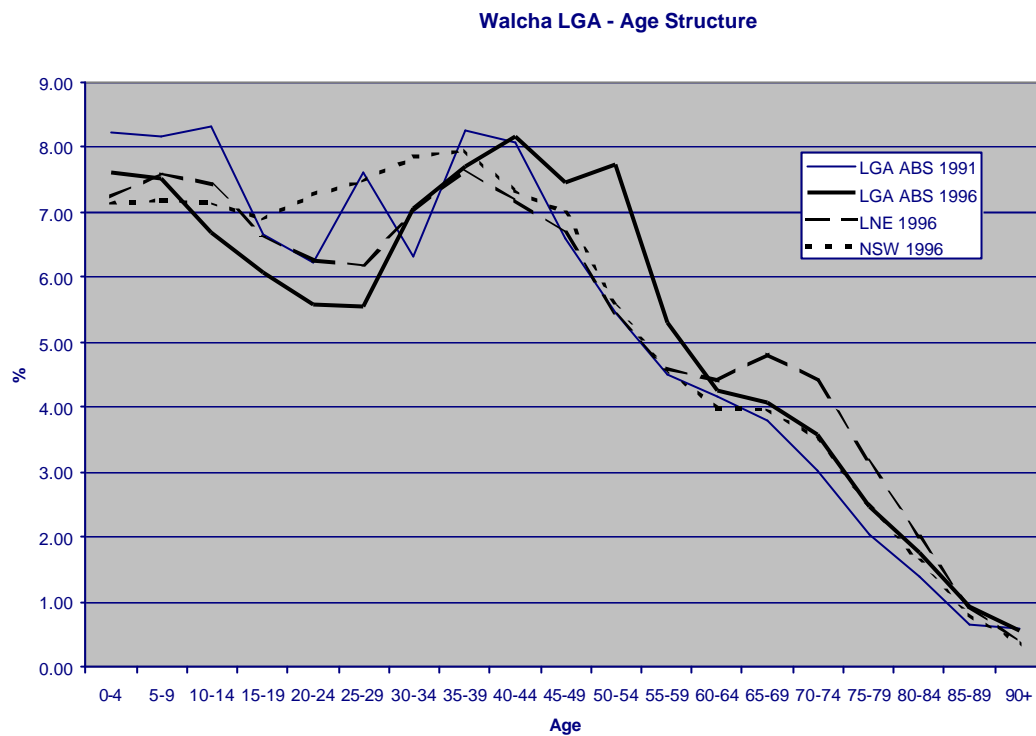
Health

Walcha township has a 30 bed district hospital run by the New England Health Service including a 20 bed geriatric unit. Walcha also has a community health service and an early childhood service. The area has three doctors and a wide range of visiting specialists, as well as an ambulance and an aged care hostel.

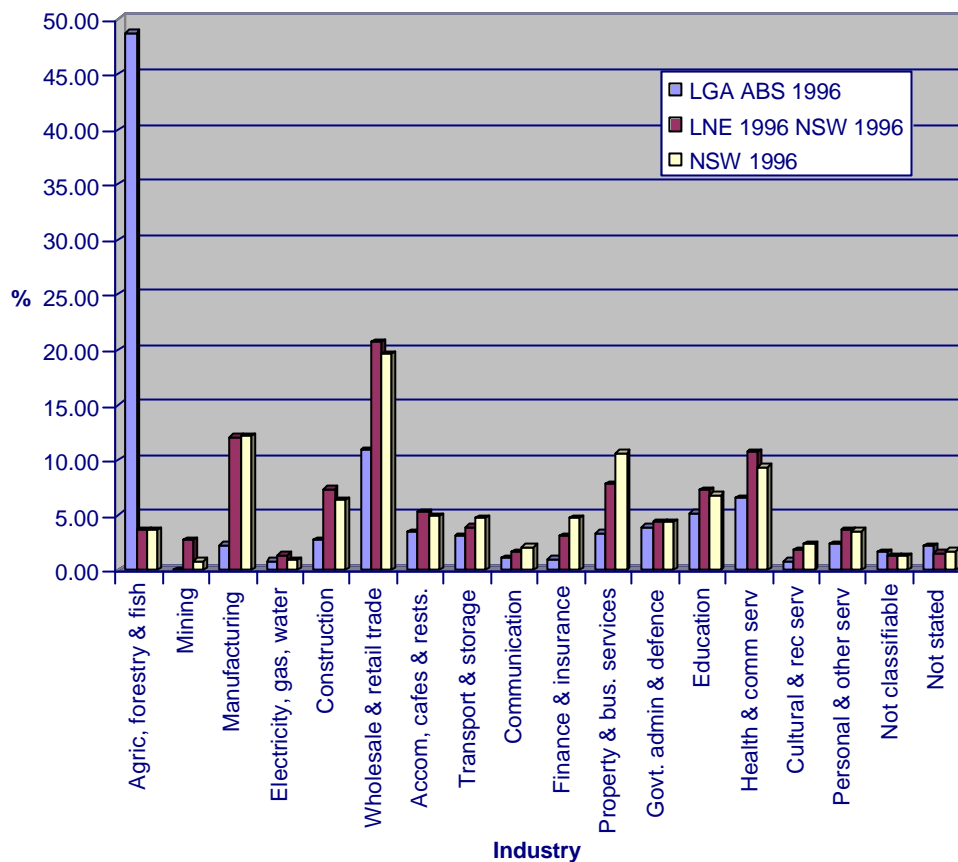
Housing

Separate houses were identified as the most popular occupied dwelling type at both the 1991 and 1996 censuses, with the number of dwellings of this type decreasing by 41 over the intercensal period (probably due to changes in residence classification). The number of unoccupied separate houses increased by 44 over the same period. The number of semi-detached dwellings and townhouses, flats, units and apartments also decreased over the intercensal period, again probably due to reclassification of residence types.

The 1996 census showed 645 dwellings were owned, 164 dwellings were being purchased and 260 dwellings were being rented. In 1996, the median housing repayment was \$607 per month and the median rent was \$55 per week. The average household size in 1996 was 2.6 people.



Walcha LGA - Employment by Industry



Wyong LGA

Wyong LGA covers 6263 square kilometres in the south east region of the Lower North East study area. The major population centres in the LGA are Gwandalan, Wyong, Lake Munmorah, Mannering Park and Chain Valley Bay.

Major industries contributing to the economy of the LGA include food processing, light industries, boat building, and tourism focused on outdoor pursuits and national parks.

Protected areas in the Wyong LGA include the Munmorah State Recreation Area and the Wyrabalong National Park.

The Wyong LGA has an airport at Warnervale and has links to the Pacific highway and the Sydney Newcastle freeway.

Population

The population of the Wyong LGA increased by 15 542 (15.4%) between the 1991 and 1996 censuses, reaching 115 999 people in 1996. The median age for the LGA increased from 35 years to 36 years in 1996, making it higher than the median for NSW (34 years) and equal to

the median for the study area (36). The number of people under 15 years decreased by 3530 (15.1%) between 1991 and 1996. The 1996 dependency ratio calculated by the ABS was 41.09%.

In 1996, 84.3% of the population were Australian-born and most were of Anglican faith and English-speaking. At the 1996 census, 1787 people or 1.54% of the population identified as Aboriginal and/or Torres Strait Islanders, compared with 977 who identified in the 1991 census, a 82.9% increase over the period.

Labour force

The 1996 census showed 5646 people were unemployed in a labour force of 45 346 people, an unemployment rate of 12.5%. This is higher than the 1996 New South Wales unemployment rate of 8.82% and a decrease from 1991 when the unemployment rate was 14.7%. The workforce participation rate in 1996 was 50.89%.

In 1991, major industries in the LGA recorded at the census were classified by the ABS as wholesale and retail trade, community services, and manufacturing. Agriculture, forestry, fishing and hunting employed 4670 people (1.4%).

In 1996, wholesale and retail trade remained the dominant industry, employing 23.39% of the labour force. The next largest industries were manufacturing (13.09%) and construction (9.94%).

The timber industry in 1996 employed 400 people, 25 in forestry and logging, 45 in sawmilling and timber dressing and 330 in other wood product manufacturing. This is an increase from 1991 when 303 people were employed in the timber industry. There was a significant increase in people employed in other wood product manufacturing and a decrease in those employed in sawmilling and timber dressing. In 1991, 25 people were employed in forestry and logging, 63 in sawmilling and timber dressing and 215 in other wood product manufacturing.

Tradespersons and related workers were the largest occupational group recorded at the 1996 census (6551 people), followed by intermediate clerical, sales and service workers (6396) and professionals (4590). The largest part of the labour force was aged between 35 and 44 years. There were more people aged 55 to 64 out of the workforce than in the workforce. At the 1996 census, 519 people over the age of 65 years were recorded in the workforce.

Median weekly individual income in the Wyong LGA in 1996 was \$254. Median weekly household income for the same period was \$483.

Education

The census showed 12 158 children attended primary schools and 7377 children attended secondary schools in 1996. This was an increase in enrolments from 1991 when 10 044 children attended primary school and 6280 children attended secondary school.

School retention declined over the intercensal period. In 1991, 37 010 people were recorded as having left school aged 15 years or less. In 1996, there were 40 418 in this group.

The number attending further educational institutions increased over the intercensal period from 3723 people in 1991 to 4414 people in 1996. The number recorded as having

qualifications increased by 5221 people from 29 113 to 34 334 over the same period. The 1996 census showed 3484 people held tertiary qualifications. In both the 1991 and 1996 censuses, the ABS recorded engineering as the area where the greatest number held qualifications, with business and administration, and architecture and building next, but reversing places over this period.

Health

Health services for Wyong LGA include two public hospitals, four early childhood centres and three community health centres. Wyong Hospital has 156 beds and provides general medical and surgical care, rehabilitation, obstetrics, day surgical and endoscopy services. The hospital at Long Jetty has 33 general beds.

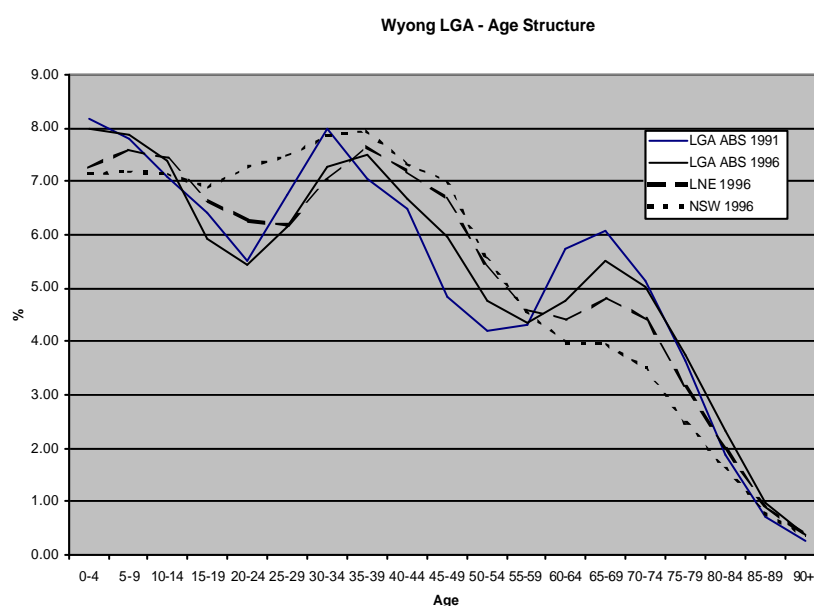
Community Health centres are located at Wyong, Toukley and Bateau Bay.

Housing

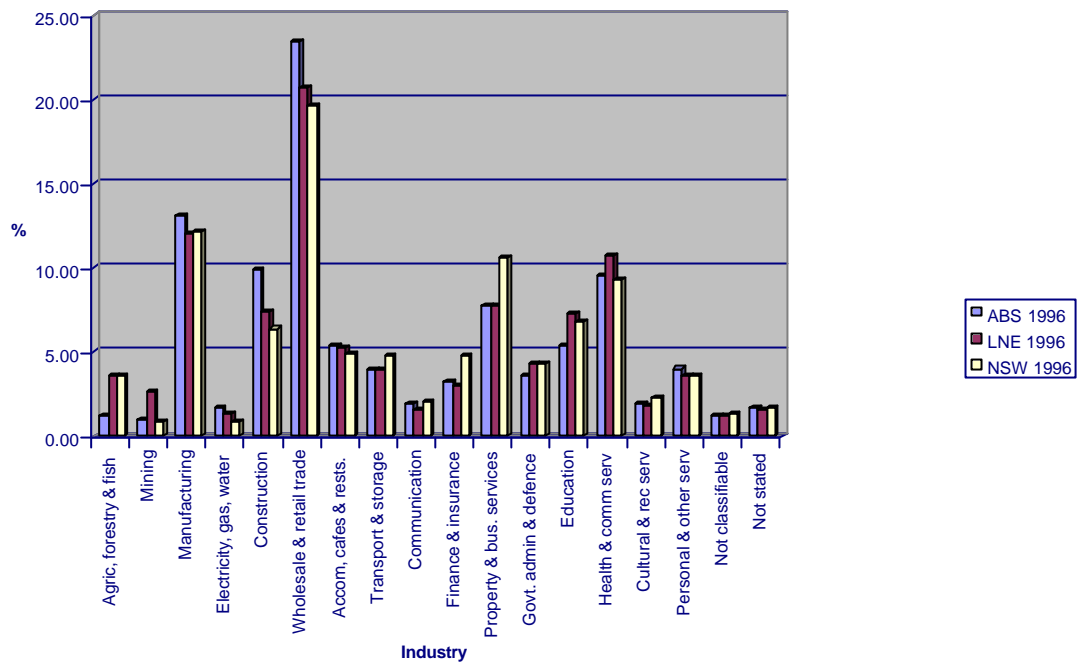
Separate houses were identified as the most popular occupied dwelling type at both the 1991 and 1996 censuses, with the number of dwellings of this type increasing by 6106 over the intercensal period. The number of unoccupied separate houses decreased by 658 over the same period. The number of semi-detached dwellings and townhouses, flats, units and apartments also increased over the intercensal period.

The 1996 census showed 20 077 dwellings were owned, 10 853 dwellings were being purchased and 10 539 dwellings were being rented. In 1996, most housing loan repayments were between \$800 and \$999 per month and most rents were between \$100 and \$199 per week.

The average household size in 1996 was 2.5 people.



Wyong LGA - Employment by Industry



5 SOCIAL VALUES OF FORESTS

Community case studies

The following case study community profiles present a current snapshot of communities in the Lower North East New South Wales region selected, in consultation with the Regional Forest Forum and the New South Wales CRA Social and Economic Technical Committee, for more detailed analysis. The data includes population (and trends), key socio-demographic characteristics, a brief history of settlement, major employment in the community by industry and forest industry proximity. In addition qualitative data has been assessed to provide a social history from the community's perspective, some of their visions for social and economic development, and a history of some recent changes which have involved a level of community management.

Some communities did not have a participative component in this process. Many had been involved in recent social assessment workshops, and these variables were assessed from secondary sources such as consultant reports, recent local government publications and key informants' contributions.

Case study area — Bellingen

History of settlement

Bellingen is located on the north coast of New South Wales, about halfway between Sydney and Brisbane and 15 kilometres west of the Pacific highway. It is situated on the Bellinger River and within Bellingen Shire.

The original inhabitants of the area were the people of the Gumbaynggirr nation consisting of different groups sharing a common dialect. Their name for the river on which the town of Bellingen is located was 'Billingen'.

The first white person to explore the area was a stockman from Kempsey who, in 1841, set off in search of navigable rivers north of the Macleay, from which to establish a viable cedar industry. By 1843 there were 20 pairs of pit-sawyers on the Bellinger River.

In 1845 the first cattle station was opened, and by 1849, land on both sides of the River near Boat Harbour (named Bellingen 1870) was sparsely settled by squatters and cedar getters. A boat building industry was also established during this time.

After the turn of the century, the rate of progress of Bellingen accelerated and it became the main business centre of the district. The introduction of the dairy industry on a large scale and the opening up of land around the district brought many new settlers. Sleeper and girder cutting for the north coast railway provided employment for hundreds of timber workers (*Pioneering in the Bellinger Valley*, Bellinger Valley Historical Society 1898; Bellinger Tourist Guide 1998).

Population

The high population growth rate which characterised the 1970s and 1980s in Bellingen has abated somewhat in the following years. In 1996 the population was 2690, a 16.9% increase

since 1991. Aboriginal people account for 2.34% of the 1996 population, well above the State average of 1.7%.

The median age of the population was 34 in 1996 and the dependency rate in 1996 was 43.62% (ABS: 1996).

Bellingen selected characteristics

	Male	Female	Total
Total population	1276	1414	2690
Aged 15 years and over	875	1047	1922
Aboriginal	28	35	63
Torres Strait Islander	0	0	0
Both Aboriginal/Torres Strait Islander	0	0	0
Australian-born	1089	1176	2265
Born overseas:			
Canada, Ireland, NZ, South Africa, UK and USA	98	112	210
Other country	34	48	82
<i>Total</i>	<i>132</i>	<i>160</i>	<i>292</i>
Speaks English only and aged five years and over	1088	1227	2315
Speaks language other than English and aged five years and over	25	35	60
Australian citizen	1171	1278	2449
Australian citizen aged 18 years and over	733	875	1608
Unemployed	105	69	174
Employed	417	397	814
In the labour force	522	466	988
Not in the labour force	326	546	872
Unemployment rate	20.1	14.8	17.6
Enumerated in private dwellings	1220	1349	2569
Enumerated in non-private dwellings	56	65	121
Persons enumerated same address five years ago	530	590	1120
Persons enumerated different address five years ago	580	677	1257
Overseas visitor	9	18	27

Source: ABS 1996 Census of Population and Housing

Major industries in the township of Bellingen

Bellingen is an administrative, retail and service centre for a number of smaller communities and the surrounding rural area. In 1996 the five major industries were health and community services (17.76%), retail trade (13.66%), manufacturing (11.8%), education (11.05%), and accommodation, cafes and restaurants (8.2%) (ABS: 1996).

Manufacturing in the town centres on arts and crafts and there are numerous galleries and retail outlets selling this local produce.

Between 1991 and 1996 there was a small decline in the areas of manufacturing, construction, and agriculture, forestry and fishing. There was a significant decline in employment in the timber industry. In 1991, 45 people were employed in the timber industry while 28 people were employed in this industry in 1996. Of these, ten people who lived in the town were employed in forestry and logging, 14 in sawmilling and timber dressing and four in other wood product manufacturing (ABS: 1996).

Industry by employment in the local government area

In 1996 agriculture, forestry or fishing was the major employer in the LGA at 13.31%. Other significant industries were manufacturing (12.32%), retail (12.61%), and health and community services (11.15%). Given the reliance of manufacturing on the resources from the primary industries sector, more than one job in four was reliant on local resources (ABS).

There was a much higher reliance on the timber industry in the LGA than in the township of Bellingen. The LGA employed 221 people; 55 in forestry and logging, 131 in sawmilling and timber dressing and 35 in other wood product manufacturing (ABS: 1996).

Tourism is an important and growing industry in the Bellingen LGA. In 1996–97 there were an estimated 142 000 visitors compared to 138 000 in 1994–95. However, tourist expenditure decreased during the same period by an estimated \$1 million, with \$33 million being spent in 1994–95 and \$32 million in 1996–97 (Tourism NSW).

Unemployment in the Bellingen LGA was slightly higher than in the Bellingen township. In the LGA, the unemployment rate was 18.6%. The unemployment rate in Bellingen was 17.6%. These figures are double the State average of 8.8% (ABS: 1996).

The following table compares industry by employment in Bellingen township and in the Bellingen LGA. (ABS: 1996)

Industry	Total % Bellingen	Total % Bellingen LGA
Agriculture, forestry, fishing	3.23	13.31
Mining	0	0
Manufacturing	11.8	12.32
Electricity, gas, water	1.61	0.86
Construction	6.58	6.07
Wholesale trade	2.73	3.57
Retail trade	13.66	12.61
Accommodation, cafes & restaurants	8.20	7.03
Transport & storage	1.37	2.74
Communication services	2.11	1.59
Finance & insurance	1.74	1.51
Property & business services	6.96	5.99
Government administration & defence	4.10	3.86
Education	11.05	9.38
Health & community services	17.76	11.15
Cultural & recreational services	1.40	2.32
Personal & other services	4.10	2.48
Not classifiable	0.37	1.12
Not stated	1.24	2.08

Income

In 1996 the median annual individual income range in Bellingen was \$10 400 to \$15 600 and the median annual household income range was \$15 600 to \$26 000. This is less than the New South Wales median individual income of \$15 500 and median annual household income of \$34 060. Approximately 1.33% of Bellingen residents earned over \$50 000 per annum (ABS: 1996).

Community infrastructure

Health

Bellingen has a 35 bed, Level one multi-purpose hospital, with medical, surgical, paediatric and emergency services. Five general medical practitioners and three specialists visit the hospital. The town has eight general practitioners. Community health offers community nursing, an immunisation clinic, physiotherapy and occupation therapy, medical imaging, mental health services, a psychologist, drug and alcohol counselling and welfare services. Other health services are provided at Coffs Harbour, approximately 30 kilometres away (Bellingen Neighbourhood Centre, Community Services Directory, 1998).

Education

Bellingen has a public high school and primary school, a Catholic primary school, a preschool and two long daycare centres.

Bellingen High School had an increase of 84 enrolments between 1993 (603) and 1998 (687). Teaching staff have also increased by approximately four positions. The state primary school has had a decrease in enrolments between 1993 (481) and 1998 (465), with teaching staff decreasing by one (NSW Department of Education and Training).

The Catholic primary school had 66 students enrolled in 1996 (ABS: 1996).

In 1998 the preschool had 77 children enrolled and has an average of 29 children per day at the school. This is an increase on five years ago when the daily number was 25. The Dawn Song Children's Centre is licensed for 20 places per day, 17 of these for long day care and three for occasional care. The centre is full after one year of operation.

Housing

The number of dwellings fully owned decreased by 5.79% between 1991 (43.42%) and 1996 (37.63%). The number of dwellings being purchased also decreased (3.94%) from approximately 28 % to 24%. Dwellings being rented showed a slight increase from 23.33% in 1991 to 24.35% in 1996. There were 84 unoccupied private dwellings in the town. This represented 8.04% of total private dwellings (ABS).

Communications

Bellingen has an FM community radio station, a local weekly newspaper the *Bellingen Courier Sun*, and a local internet service.

Community services

Bellingen has a range of community services. Aged care services include five accommodation services, a day care centre, home care, and three senior citizen's groups. Children's services extend to eight after-school activities, vacation care, family day care, and a playgroup. There are: ten halls and meeting rooms, a Chamber of Commerce, nine environment and conservation groups, five service clubs, eight performing arts groups and 24 sports and leisure groups.

Youth services include a counselling service and a referral and resource centre. There are also seven counselling and support groups, three disability services, two employment services, a neighbourhood centre and tourist information centre (Bellingen Neighbourhood Centre, Community Services Directory, 1998).

Annual events

Bellingen's annual events include the Jazz Festival, the Global Carnival and the Agricultural Show.

Outcomes of Bellingen community workshop

(Held: Monday 24 August 1998)

Groups represented: the timber industry, National Parks and Wildlife Service, Bellingen Jazz Festival, Bellingen Chamber of Commerce, Tourism Bellingen, Bellingen High School, Landcare, Business Enterprise Centre, Community Transport.

Significant events in Bellingen since 1980

Year	Event
1978	Neighbourhood centre and learning centre developed
	Bill Mollison early advocate and job creations schemes evolved from this
1980 to present	Three-quarters of the sawmills in the area closed
	No more sleeper cutters in the area because the railways went to concrete
	Access to State forests and quotas reduced
	Wage increases also had an impact
1981	Bellingen Markets established
1981	Yellow Shed developed (community driven)
1982	Butter factory refurbished and established as a craft centre
	Old Council Chambers refurbished as offices and new Council Chambers built
Last 10 years	Change in population. Influx from other areas/countries. Around 15 000 people came to buy land and area has less rural orientation
	More 'alternative lifestyle' people — refugees from suburbia
	Increased enrolment at Steiner School (Chrysalis School) which also attracted people. Thora School also attractive because it is a rural school. Kalang Valley School established
1989	Refurbishment of buildings in town by businessman Barry Smith, including pub, courtyard, workshops, shops. Positive impact on town
1990	First Bellingen Jazz Festival (annual event now)
1991	Opening of Dorrig Rainforest Centre (around 185 000 people through it annually with flow-on effect on Bellingen)
Last 5 to 10 years	Increase in ecotourism including 4WD tours
	Declaration of Solitary Islands Marine Park that had a flow on effect on tourism in Bellingen
	Increase in number of bed and breakfast establishments (at least 50 in Shire)
1995	Global Carnival established (annual music carnival)
1997	Bellinger River National Park declared

How did the community manage these events?

Positive event — the Bellingen Markets

- Chris Alforth of the Yellow Shed was instrumental in establishing the markets, through the Bellingen Workers Coop. The Old School Community Shed was pulled down and an alternative site (later called the Yellow Shed) was acquired by the White Family. The Workers Coop took back the shed from the opening and made it available to anyone with craft skills. The CYSS scheme had been going and people coming into the Shire wanted

to acquire work skills. They got a kiln, pottery, stained glass making equipment and had lots of craft workshops to develop skills.

- The Bellingen Residents Association became the sponsoring body and money from the markets was donated to non-profit organisations in town. The markets became a social and economic event with people from different Shires getting together. Outsiders also come to it now. It has become a community focus and an economic influence with tens of thousands of dollars changing hands. Around 5000 to 10 000 people are attracted to any one market and there is a commensurate flow-on into the community. This is considered positive because money stays in Bellingen whereas with big organisations such as Woolworths, the money goes out of the town. Lots of people come to the markets when the Jazz Festival is on and organisers believe the markets help sell the Festival. Local musicians are paid to perform and this is an excellent venue at which to get exposure.
- It is considered to be a nourishing and enriching event that has brought a sense of social integrity. It is bringing people from as far away as Sydney. The town's ability to accept diversity has increased a lot and this is complemented by their acceptance of events such as the markets.

Negative event — mill closures

- Around three-quarters of the mills have been closed. This was felt most by the older residents of Bellingen. Those who came in the mid-1970s did not feel the closures (the 1500 who moved in) and were not aware of the changes. The closures led to an increase in unemployment, reliance on social security. Lots of people working in the mills had to leave. They wouldn't go on the dole and most went to Sydney or out west. Families were fractured. There was no community response. Those who had recently come in celebrated the closures because they did not see sawmilling as a good thing. The sawmillers were outnumbered.
- At the same time API/Boral were buying up leases and squeezing out the smaller mills. People had private responses. There were two religions — one coming and one going. People coming in had intellectual ideas, those going had practical ideas. The State Rail Authority's 'lay off' of people, and conversion from timber to concrete sleepers had a further impact. A lot of the 'alternatives' came to Bellingen then went to Dorriggo

Community feelings about Bellingen

- | |
|---|
| <ul style="list-style-type: none"> ▪ I was born here so I have seen some changes. I have no regrets. The place has filled up. ▪ This is the best place on earth. I came here 15 years ago when I left work because of injury. I feel sad the timber has been taken away from a timber town. I'd like a company to start up another mill. ▪ This is a beautiful area. It has a real sense of community. The downside is that its economic strength is being 'sucked out'. A grocery store closed in the last two weeks (an institution) and two banks have closed in the last two years. The history of Bellingen is of wealth accumulated but not here. The money has been going to Sydney and regional centres. ▪ New people come to Bellingen because it's beautiful but when they get here they keep trying to change it. This has been happening since the 1970s and is still happening. ▪ I had a job in Dorriggo and in the West before and I like Bellingen. It has a lot to offer for such a small town in the way of services and events. It's hard to find anything similar. Escalating youth problems in the town. There are a lot of people living on benefits but not many employment opportunities. The bubble might burst one day. ▪ Not many country towns escape problems. Communities have to move on. The early cedar getters had an effect on the community. Planet Lighting (small company, moved from Melbourne) had its ups and downs but is still going. ▪ Changes have had a major impact on enrolments and the way schools have been run. It has changed from the traditional base. Bellingen is very different from many country towns because of the high degree of diversity here and a range of values. There are a lot community-based things happening |
|---|

here.

- I feel very good about it as a newcomer. Been here 16 years. Didn't want to change the place. It's a wonderful community. Lots to do. Angry with Woolworths because they won't buy local produce e.g. milk produced locally but comes from 'Mexico' [south of the border]. Will shop locally.
- I've lived here off and on for my whole life, over 20 years. People need to pay for the local economy to survive by buying locally not Woolworths because they're 2c cheaper. Norco Rural Supplies are local. I always buy there. Their price is equal and sometimes cheaper. We need to pay for integrity. People are locked into believing they have to get it from big stores e.g. Coffs Harbour.
- Changed from predominantly timber industry and farming. Industries no longer as viable or as attractive, though they still have a place. The corporate part is unsustainable. More are valuing the conservation side now e.g. bushwalks. Attractive not because of mill jobs but because of its beauty. Might be on dole but unemployment rates are high elsewhere too. Need to keep spending money in town.

Visions for Bellingen

- Shopping locally — local economic base. Quality of life high despite low income base. Decreasing unemployment.
- May turn out like Nimbin.
- Newcomers outnumber long termers.
- Value adding in timber industries. Music instrument making started around two years ago using local timbers and employees (now employing 1.5 people).
- Worthwhile opportunities for young people so they can stay if they want to. Young disappear. Wanting to experience big city can be a factor. Supply skateboard ramps etc.
- Bellingen Valley has the highest cellular growth rate — opportunities for growing great e.g. nut trees, nurseries.
- Bed and breakfast on every corner and an airport.
- More access from mid coast — playground for urbanites — best beaches and scenery.
- Bellingen has a myth about it. Money is coming from the outside via ecotourism etc. The myth is based on conflict between alternatives and traditionalists. Need to market with caution.
- Need lots of industries — small industries.
- If tourism stops, we'll die. Special kind of tourism, but no community was ever rich making tourism a major industry e.g. Coffs Harbour.
- People like to come and 'look at us' — traditional lifestyles, farming practices etc.
- An industrial area for Bellingen. Hard to attract industry without industrial area. Need light industry. The industrial area for Bellingen is near the tip on the highway. Tried a few years ago. Council hit the idea on the head. No good where it is because of the flies.

Reaction to forest use options

What might be some of the social impacts in Bellingen if forest areas currently deferred become available for conservation and recreation uses?

The tables below detail the participants' comments which have been charted to match the way they were prioritised.

Positive social impacts	Negative social impacts
<ul style="list-style-type: none">▪ Increase value of region for tourism — environmental 'intactness'▪ Will improve water quality in catchment areas	

<ul style="list-style-type: none"> Increased pride — ‘green community’ More national parks. Increase in certain types of tourism. 	<ul style="list-style-type: none"> Increased anger amongst traditional people with increase in tourism Increased fire danger in national parks — few fire trails Reduced access for camping National parks will cost taxpayers more money Destroy social fabric of people who relied on the industry as a way of life over generations More national parks on front of every tourist brochure — ‘marketing’ and increased tourism
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What might be some of the social impacts in Bellingen if forest areas currently deferred become available for industry and other uses?

Positive social impacts	Negative social impacts
<ul style="list-style-type: none"> Selective logging areas to keep jobs we’ve got 	<ul style="list-style-type: none"> Continued use of inefficient / uneconomical & unsustainable land

What might be some of the social impacts in Bellingen if 50% of areas currently deferred are available for industry and 50% are available for conservation and recreation?

Positive social impacts	Negative social impacts
<ul style="list-style-type: none"> Preserve both traditional heritage base (mills) e.g. Cascade as well as environmental Maintain diversity (between traditional and new) — particularly in school community Keep balance between jobs and tourism Increase tourism. Jobs. Balance community service not just tourists — visitors who stay. Preserve jobs and get more National parks can create specialised tourism industry 	

Case study area — Bowraville

History of settlement

Bowraville is situated on the Mid North Coast of New South Wales, within the Nambucca local government area. This rural town is 12 kilometres inland from Macksville and the Pacific Highway and accessible via roads on the north and south of the Nambucca River.

As with many towns on the North Coast, the history of white settlement is closely tied to cedar. The first cedar getters arrived in the area in the 1830s and 1840s, settling in locations

similar to the current day urban areas. Bowraville was proclaimed a town in 1871 and made the headquarters of the newly formed Nambucca Shire Council in 1915.

The town became the principal commercial centre for settlers involved in dairying, timber and banana growing. More recently the town has become known as a tourist destination, with people attracted to the restoration of many of the old buildings in the town and the local nature reserve at Missabotti.

The population of Bowraville has increased and decreased over time, the latest population growth associated with the arrival of rural settlers from the cities in the mid-1980s. Despite a decline in population over the past ten years and the shire council relocating to Macksville in the mid-1980s, Bowraville retains its role as a service centre for the surrounding rural areas (Nambucca Shire Council Community Profile, 1998).

Population

In 1996 Bowraville had a population of 884, a decrease of almost 10% from 1991 when the population was 969. In 1996 the largest age group was 0–14 years making up almost 30% of the population. The second largest group was 30–44 years, almost 22%. One of the features of the Bowraville population is the large proportion of Aboriginal and/or Torres Strait Islanders, some 18% in 1998.

The biggest changes in population since 1991 were the increase in the under 15 age group and a marked decrease in 15 to 29 year olds.

The median age of the population in 1996 was 33 and in 1991 was 34, and the dependency ratio was 44.72% (ABS).

Bowraville selected characteristics

	Male	Female	Total
Total population	455	478	933
Aged 15 years and over	324	340	664
Aboriginal	81	78	159
Torres Strait Islander	0	3	3
Both Aboriginal/Torres Strait Islander	0	0	0
Australian-born	429	445	874
Born overseas:			
Canada, Ireland, NZ, South Africa, UK and USA	13	13	26
Other country	5	8	13
<i>Total</i>	<i>18</i>	<i>21</i>	<i>39</i>
Speaks English only and aged five years and over	399	405	804
Speaks language other than English and aged five years and over	7	17	24
Australian citizen	431	461	892
Australian citizen aged 18 years and over	295	314	609
Unemployed	43	18	61
Employed	131	103	234
In the labour force	174	121	295
Not in the labour force	145	217	362
Unemployment rate	24.7	14.9	20.7
Enumerated in private dwellings	453	477	930
Enumerated in non-private dwellings	3	0	3
Persons enumerated same address five years ago	249	232	481
Persons enumerated different address five years ago	143	178	321
Overseas visitor	0	0	0

Source: ABS 1996 Census of Population and Housing

Major industries in the township of Bowraville

The major industries in Bowraville relate to the provision of services to the local community. These include general stores, food outlets, service stations, supermarkets, licensed premises, craft shops, post office, a school, health and numerous cultural and sporting facilities. Agricultural land comprises 19% of the Nambucca LGA and is focused on the industries of beef cattle, dairying, banana plantations and other crop growing such as vegetables, nuts, avocados and kiwi fruit (Nambucca Shire Council, Community Profile, 1998).

The major employment areas for people in Bowraville were in retail and wholesale trade (19.21%), manufacturing (14.41%), education (9.6%) and in health and community services (8.73%) (ABS: 1996).

There has been a decline in the number of people employed in primary industries from 7.4% in 1991 to 3.93% in 1996. In 1996, 11 people were employed in the timber industry in the town, a significant decline from 1991 when 23 people had jobs in this industry (ABS).

Industry by employment in the local government area

The largest industry in Nambucca LGA was wholesale and retail trade, employing 19.25% of the population. Second to this, manufacturing employed 11.65% of the residents of Nambucca, then agriculture, forestry and fishing (11.47%), health and community services (9.66%) and education (8.41%). Since 1991, there has been a decline in employment by around 2% in both primary industries and manufacturing and a 2% increase in retail and

wholesale trade. The employment numbers in the other categories for the LGA, in as far as they can be compared, were very similar between 1991 and 1996 (ABS).

When comparing employment in industry categories between Bowraville and Nambucca LGA, it is apparent that the LGA is much more reliant on primary industries. There was a greater reliance on manufacturing in Bowraville (14.41%) than in the LGA (11.65%). However all other categories were very similar.

There has been a significant decline in employment in the timber industry in the LGA between 1991 and 1996, with almost a third of the jobs lost. In 1991, 177 people worked in the timber industry and 128 in 1996. Most of the jobs lost were in forestry and logging (11) and sawmilling and timber dressing (20). In 1996, 29 people were employed in forestry and logging, 80 in sawmilling and timber dressing and 19 in other wood product manufacturing (ABS).

Tourism has become increasingly important to Nambucca LGA. In 1996–97 an estimated 266 000 people visited the LGA, 40 000 more than in 1994–95. Tourist expenditure has also risen during this period by \$2 million, with tourists spending an estimated \$51 million in 1996–97 (Tourism NSW).

Unemployment rates for the area are exceptionally high by State standards, especially for males. In general unemployment in the Nambucca LGA was similar to Bowraville, with the overall rate slightly higher for the town than the LGA. In the LGA 22.1% of males were unemployed and 15.6% of females; the combined unemployment rate was 15.4%. The unemployment rate for males in the town was 24.7%, females 14.9% and the combined rate was 20.7%. The figures for the LGA are much higher than the State average of 8.8% (ABS: 1996).

The following table compares industry by employment in Bowraville and in the Nambucca LGA (ABS: 1996).

Industry	Total % Bowraville	Total % Nambucca LGA
Agriculture, forestry, fishing	3.93	11.47
Mining	0	0.23
Manufacturing	14.41	11.65
Electricity, gas, water	0	0.64
Construction	5.68	6.04
Wholesale trade	3.93	3.43
Retail trade	15.28	15.82
Accommodation, cafes & restaurants	5.24	7.81
Transport & storage	3.93	3.54
Communication services	3.06	1.5
Finance & insurance	1.31	2.47
Property & business services	4.80	5.43
Government administration & defence	4.80	3.74
Education	9.60	8.41
Health & community services	8.73	9.66
Cultural & recreational services	2.62	1.23
Personal & other services	4.80	3.68
Not classifiable	1.31	0.78
Not stated	6.55	2.45

Income

In 1996 the median annual individual income range was \$8320 to \$10 400 and the median annual household income range was \$15 600 to \$26 000; 47% of individuals earned over \$50 000 a year. The median annual individual income for New South Wales was \$15 500 and the household income was \$34 060 (ABS).

Community infrastructure

Health

The town's health services include dentist, doctors and a pharmacy. Also offered are an early childhood clinic and a monthly clinic outreach from Coffs Harbour Women's Health Centre (Nambucca Community Profile, 1998).

Education

Bowraville has a community preschool, a central school (K–10), Catholic primary school and an alternative school, Tallowood.

Bowraville Central School's enrolment figures increased between 1993 (356) and 1998 (398) by 11.78%. The number of teachers has also increased by 2.5 to 25.88 in 1998 (NSW Department of Education and Training).

The preschool had 22 children attending in 1996, two less than in 1991. Thirty one children attended the Catholic school in 1996 and 12 attended the alternative school (ABS).

Housing

The number of fully owned dwellings decreased by 3.41% in Bowraville between 1991 and 1996, from 49.13% to 45.72%. The number of dwellings being purchased increased by 1.44% between 1991 (17.44%) and 1996 (18.88%) and the number of rented dwellings increased by 2.18% from 28.2% to 30.38% (ABS).

In Bowraville the median monthly housing loan repayment was \$508 and the median weekly rent was \$100. There were 45 unoccupied private dwellings in the town representing 11.72% of the total private dwellings (ABS).

There were 14 public houses in Bowraville and housing for Aboriginal and Torres Strait Islander people provided by various Aboriginal organisations. Aged housing is provided by the CWA and Uniting Church (Nambucca Council Community Profile, 1998).

Communications

Bowraville has a community radio broadcasting station.

Community services

Bowraville has a range of facilities and services. The types of services reflect the town's indigenous population, with an Aboriginal land council, health clinic, Mimi Women's Aboriginal Corporation, TAFE Annex and various community organisations and corporations which deal with specific issues such as housing, sobriety, and culture. Bowraville also has a strong Aboriginal Christian ministry through the Catholic Church.

The town has a range of sporting and leisure facilities including a nine-hole golf course, bowls, squash, tennis, racecourse, and jockey club, together with playing fields and a skate facility (Nambucca Council Community Profile, 1998).

Annual events

Community events include the Bowraville Jazz Festival and the Back to Bowra Festival.

Community perspectives in Bowraville

There were no community workshops held in Bowraville, but consultations with community leaders have provided a history of recent change. Over the last 10 to 15 years there has been a change in economic sources for the community including an increase in tourism, diversification of agricultural industries and new businesses establishing in the town. New people have also arrived in town bringing new ideas.

Bowraville has had a resurgence over the last four years with many new people with new ideas and skills moving to the Valley. Many of the new arrivals are families with young children. There has been an improvement in community relationships through shared experience of difficult times and community spirit is high.

Promotion of tourism is supported by the community, with many local businesses taking advantage of the historic buildings in the town. A new park developed through a committee of 20 people was recently opened, and a fair held in the park attracted 1000 people to the event. Other community initiatives include the 'Work for the Dole' scheme focusing on a street beautification project

The Nambucca Valley has been identified as a new growth area, and multinational companies are moving in. The community is concerned that, unless they position themselves for this, local businesses such as cooperatives will not survive. The closure of MIDCO in 1998 had an adverse impact on the town as 36 families lost their income with the closure.

There has been diversification of primary industries as dairying and beef cattle, the traditional sources of rural income, are no longer financially viable. There are now only three large dairy farms left in the district. New agricultural pursuits include growing garlic, hemp, liquorice, teatree and macadamia nuts. A group of local people are currently undertaking economic viability studies relating to agriculture in the area and a hemp cooperative has been formed.

There are two sawmills currently operating in Bowraville, Mitchells mill and Bowraville Sawmilling. Both sawmills have strong community support.

Case study area — Bulahdelah

History of settlement

Bulahdelah is located in the Great Lakes Shire on the Mid North Coast of New South Wales. Its situation on the junction of the Myall and Crawford Rivers gives rise to the name Bulahdelah, an Aboriginal word for 'meeting of the waters'. The town has five State forests in the immediate vicinity.

The Aboriginal people of the Bulahdelah-Karuah-Myall Lakes area were from the Worimi tribe who occupied the main part of the Hunter Valley, and the Biripi tribe whose area included the Barrington Tops, Gloucester and Forster areas. Both the Worimi and Biripi tribes spoke dialects of the Kattang language.

In 1816 cedar getters and their convict servants arrived in the area. Their impact caused a dispersal of the tribes. As a result tribal boundaries ceased to be observed and the Biripi and Worimi intermingled and camped in the same territory.

Excavation for the Bulahdelah-Coolongolook deviation to the Pacific Highway uncovered fourteen Aboriginal sites with scatters of stone artefacts and eleven isolated finds of artefacts. Most of the materials used for the stone tools were from the Bulahdelah region, but some were carried in from quite far away. The artefacts were mainly found in the dry forests.

The first land grant in Myall River Settlement, the original name for Bulahdelah, occurred in 1840. Bulahdelah became the settlement's official name in 1877 and it was proclaimed a village in 1886. The town was a central point for all the tiny settlements and expanded while others did not. Its location and improvements to transport attracted people to live in town.

The timber industry has always been the keystone of the district, with the first private application for timber grants in 1836. Concern over the sustainability of the forest resource caused a Royal Commission into the forest industry and led to a plan of management as early as 1924.

Today the town is largely a highway service centre and destination for people touring the Myall Lakes and surrounding forests (Great Lakes Community Profile, 1997; Archaeology of the Bulahdelah-Coololongolook Deviation of the Pacific Highway; Bulahdelah Central School Centenary 1868–1968).

Population

In 1996 the population of Bulahdelah was 1113, a 98% increase since 1991. Aboriginal people represented 2.6% of the total 1996 population.

The median age of the population in 1996 was 40 and the dependency rate was 41.22% (ABS: 1996).

Bulahdelah selected characteristics

	Male	Female	Total
Total population	550	563	1113
Aged 15 years and over	431	445	876
Aboriginal	12	17	29
Torres Strait Islander	0	0	0
Both Aboriginal/Torres Strait Islander	0	0	0
Australian-born	498	492	990
Born overseas:			
Canada, Ireland, NZ, South Africa, UK and USA	18	17	35
Other country	9	10	19
Total	27	27	54
Speaks English only and aged five years and over	484	466	950
Speaks language other than English and aged five years and over	11	13	24
Australian citizen	525	524	1049
Australian citizen aged 18 years and over	392	390	782
Unemployed	17	9	26
Employed	237	172	409
In the labour force	254	181	435
Not in the labour force	165	255	420
Unemployment rate	6.7	5	6
Enumerated in private dwellings	510	521	1031
Enumerated in non-private dwellings	40	42	82
Persons enumerated same address five years ago	329	324	653
Persons enumerated different address five years ago	172	183	355
Overseas visitor	4	0	4

Source: ABS 1996 Census of Population and Housing

Major industries in the township of Bulahdelah

Between 1991 and 1996 there was little change in employment in the various industries in Bulahdelah.

Bulahdelah is a service centre for the surrounding rural area as demonstrated by the concentration of employment in wholesale and retail trade (20.74%), health and community services (12.6%) and accommodation, cafes and restaurants (10.5%).

Other industries that are important in the town are manufacturing (13.2%) and agriculture, forestry and fishing employing (8.66%). Of the 81 people living in the town employed in primary industries and manufacturing, 61 worked in the timber industry. Twenty one were employed in forestry and logging, and 40 in sawmilling and timber dressing.

As the gateway to the Myall Lakes National Park, tourism also plays an important part in the economy of the town. The town's location on the Pacific Highway also attracts a passing tourist trade (ABS: 1996).

Industry by employment in the local government area

In 1996 the largest industry in the Great Lakes LGA was wholesale and retail trade (22.06%). Other major industries were accommodation, cafes and restaurants (9.52%), health and community services (8.72%), agriculture, forestry and fishing (8.39%) and manufacturing

(7.74%). There were no significant changes in employment in these industries between 1991 and 1996 (ABS: 1996).

A comparison of employment numbers in the various industries highlights some significant differences between Bulahdelah township and the LGA. There were higher levels of employment in Bulahdelah in manufacturing (13.12%; 7.74% in the LGA), and health and community services (12.6% in Bulahdelah; 8.72% in the LGA). However, more people were employed in construction in the LGA (8.49%; Bulahdelah 4.72%) (ABS: 1996).

In 1996 276 people in the Great Lakes worked in the timber industry; 51 were employed in forestry and logging, 162 in sawmilling and timber dressing, and 63 in other wood product manufacturing (ABS: 1996).

Tourism has become increasingly important to Great Lakes, and has been largely responsible for the growth of the towns and villages in the LGA (Great Lakes Community Profile 1997). In 1996–97 an estimated 673 000 people visited the LGA, 63 000 more than in 1994–95. Tourist expenditure in 1996–97 rose by \$8 million with tourists spending an estimated \$124 million (Tourism NSW).

Unemployment in the LGA was much higher than in Bulahdelah. The unemployment rate in Bulahdelah was 6%, and in the LGA it was 15.4%. This is almost twice that of the State average of 8.8% (ABS: 1996).

The following table compares industry by employment in Bulahdelah and in the Great Lakes LGA (ABS: 1996).

Industry	Total % Bulahdelah.	Total % Great Lakes LGA
Agriculture, forestry, fishing	8.66	8.39
Mining	3.94	1.31
Manufacturing	13.12	7.74
Electricity, gas, water	1.57	0.61
Construction	4.72	8.49
Wholesale trade	2.10	3.40
Retail trade	18.64	18.66
Accommodation, cafes & restaurants	10.50	9.52
Transport & storage	3.41	2.91
Communication services	2.62	1.22
Finance & insurance	1.84	2.53
Property & business services	2.89	6.58
Government administration & defence	4.20	4.26
Education	6.04	6.18
Health & community services	12.60	8.72
Cultural & recreational services	0	1.46
Personal & other services	1.57	4.36
Not classifiable	0	1.22
Not stated	1.57	2.44

Income

In 1996 the median annual individual income range was \$10 400 to \$15 600 and the median annual household income range was \$15 600 to \$26 000. Approximately 0.46% of individuals earned over \$50 000 per annum. The median annual individual income for New South Wales was \$15 500 and the household income was \$34 060 (ABS: 1996).

Community infrastructure

Health

Bulahdelah has a hospital with 13 beds and provides accident and emergency services. The ambulance centre was built in 1990 with funds raised in the community. The town has one general medical practitioner and no dentist.

The Great Lakes Nursing Home has 40 beds and was built as a local initiative with much of the fund raising for this amenity coming from the local community.

There is a community health centre located in the town providing an early childhood nurse, generalist community nurses, a mental health nurse, a needle/syringe exchange service, and a transport service.

Most health services for Bulahdelah are outreached from Taree, Gloucester or Forster-Tuncurry. These include child sexual assault, Aboriginal health, child and family health, various therapists, palliative care, school screening for sight, hearing and dental health, women's health, alcohol and other drugs counselling (Great Lakes Community Profile, 1997).

Education

Bulahdelah has a State central school (K–12), a Catholic primary school and a preschool. In 1998, the central school had an enrolment of 502 students, 39 teachers, and 10 support staff. School enrolments and staffing have increased since 1994 when the school had 426 students, 30 teachers and 6 support staff.

The town's Catholic primary school also had an increase in enrolments, with 12 students in 1991 and 17 in 1996. Bulahdelah's preschool enrolment was 47 in 1998. This number has remained unchanged over a number of years (ABS: 1996).

Housing

The number of dwellings fully owned has decreased by 6.79% between 1991 (53.36%) and 1996 (60.15%). The number of dwellings being purchased increased by 3.62% during this period to 16.49%. Dwellings being rented decreased by 3.8% from 1993 to 16.49% in 1996 (ABS: 1991 96)

There are 37 unoccupied private dwellings in the town representing 8.03% of the total private dwellings (ABS: 1996)

Communications

Bulahdelah is served by a regional newspaper, the *Nota-Myall Coast News*.

Community services

Bulahdelah has a range of community services provided by local and State governments and the community. Many community facilities were built using funds raised by the local community — for example, the show ground, bowling club, and nursing home.

The range of community services includes children's services; youth services; services for the aged and disabled; recreational, leisure and sporting services; cultural; community development; and Aboriginal services. Some of the services are located in Bulahdelah and others are provided on an outreach basis from the larger towns in the local government area.

Family support services are provided on an outreach basis.

Most services for youth in Bulahdelah are outreached and include an Aboriginal youth worker, a youth accommodation support worker, and a youth development worker.

Leisure and recreation services in Bulahdelah include boating facilities, various sporting venues, a public hall, a playground for children, a showground, a swimming pool, and a visitors information centre.

Other community services in Bulahdelah include the Chamber of Commerce and Tourism, a rural fire brigade, a library, a police station, a post office, a progress association, and a State emergency service/volunteer rescue squad (Great Lakes Community Profile, 1997).

Annual events

Bulahdelah's annual events include the Myall Friendly Paddle Challenge (twice a year), Bulahdelah Junior Rodeo, Christmas in July, Bulahdelah Hospital Market Day, Bulahdelah Dressage Club Competition, Bulahdelah Bass Bash and Aquatic Weekend, the Branch Races, and the Bulahdelah Show and Rodeo.

Outcomes of Bulahdelah community workshop

(Held: 27 August 1998)

Groups represented: Progress Association, Emergency Services, Great Lakes Shire Council, Nature Conservation Council, religious groups, Aboriginal Lands Council, timber mills, and State forests.

Significant events in Bulahdelah since 1980

Year	Event
1980	Playing fields upgraded with night lights. People come from miles away to use the fields
1980 on	Expansion of houseboat industry
1982	Move to close Bulahdelah hospital including 13 beds plus accident and emergency, not successful
1983	Bulahdelah show started again
1983	Alum Mountain Park recreation facilities developed
1985	Multi-million dollar water and sewer plant constructed
1991	Opening of 40 bed nursing home
1992	Myall Lakes boarding kennel opened
1992	Bulahdelah Woodchoppers won the Rugby League then folded 1994
1995	CRA process began
1995–1998	Negative changes to timber industry
1996	Recording of Aboriginal sites 1000 years old. Relics preserved from this on display. Other sites destroyed with deviation
1996	Bulahdelah Myall motel opened

Year	Event
1996	Police removed from town. Highway patrol based in Forster. Two officers reinstated 1997
1996	Construction pedestrian control lights on highway. Increase in highway accidents since new highway developed
1996	Bank closed on 6 November
Dec 1996 on	Development of new highway bypass 5 km north (Bulahdelah to Coolongolook)
1997	Mason's Mill closed
1997	Bungwahl Mill closed (Herbert's)
1998	Construction of school pedestrian crossing (many accidents on highway)
1998	Tourism and interpretive centre opened

How did the community manage these events?

Positive event — the opening of the nursing home

- Made an application in 1988 to the government, was approved in 1992.
- Half a million dollars was raised by the community through raffles, show committee and lots of donations of up to \$1000 and one person mortgaged their property.
- It employs 67 people including 50 full-time.
- Started by local committee of six to eight people. Needed because locals had elderly relatives on waiting lists and there were no available beds locally and had to travel long distances to visit relatives in other towns.
- Managed by local board.
- Good for morale, people are happy to talk about it. It's a good facility and provides a community bus.
- The nursing home does the meals and laundry for the hospital.
- Currently building eight hostel units from extra money and building eight self care units.

Negative event — downturn in timber industry

- Many people lost jobs and not many of them have jobs now. We hoped Thiess road builders (working on the highway deviation) would employ locals but didn't.
- Most stayed in town because of family connections. If you've grown up somewhere and want to live there you shouldn't have to move.
- Many got redundancies. Some were offered relocation to Oberon (two or three), two got jobs in National Parks and Wildlife Service.
- People have less money to spend in town at the butchers and supermarket. Notice it at the school. There's more demand at the opportunity shop. Sawmillers already badly paid but more than the dole.
- Social aspects associated with becoming unemployable, especially 40–50 year old managers and workers. Loss of self esteem, home problems, social flow-ons such as domestic violence. Mental health workers' hours have doubled.
- North Power stood down many and bank lost six people. Telstra added to this scenario. State forests were relocated to Taree, with some locals moving there, so dollars were lost to the community. School lost 1–2 teachers.
- Some travel great distances to work, costing extra money and causing family stress. The roads are dangerous for commuters.

- The big money earners left town, smaller earners stayed.
- One kick after another. Wonder about the causes?
- The timber industry downturn affected employment in State forests.
- The community does the best it can. Don't get enough money for the product due to imports from Victoria and Western Australia. Affects royalty payments and quality of timber. Indonesia is flooding the woodchip market. Tasmania buys from them.
- Written hundreds of letters to timber industry, government etc, many petitions, that made some difference.
- Newells Creek got \$1.5 million for restructuring and value adding, through FISAP. Held public meetings. Newells Creek will not employ as many as lost jobs. Two mills closed around 40 employees.

Community feelings about Bulahdelah

- Great place to live, 34 organisations, close networks, centre of everything.
- Good distance to beach.
- Born and reared here. It's a good place for kids.
- Chosen to come and stay. Could leave things unlocked.
- Dealings are friendly and open.
- It's a homogenous society.
- I've lived here all my life. It's the greatest place and close to Newcastle.
- I love the forest and waterways.
- I've lived here for twelve years and have spent a lot of money to stay here (to travel to work). There are no social problems. There's a low teacher/pupil ratio at the school. You don't have to lock everything up. Proximity to everything — Sydney Symphony Orchestra, choral societies etc in Newcastle.

Visions for Bulahdelah

- Bulahdelah — 'The unspoilt escape' (tourism promotion).
- I'd like it to remain as a cohesive community, open to change and to remain in control. Moving the highway has lost value to the community as has loss of forests.
- Get forestry back to where it was 15 years ago, maybe through plantations.
- School leavers have secure jobs and to know 'this is where I'm going'. They're part of our world.
- Issue of employment — Bulahdelah becomes a centre of regional tourism.
- Peace and quiet and a sense of community identity and pulling together.
- Release of IDFA areas and a future for the timber industry.
- Waterways for everyone, not locking up access in national parks. More tourism.
- The community engine is running a bit rough at the moment. It needs fine tuning. It's a perfect little village.
- Thriving town, prosperous from one of Australia's best national park reserve systems and an ecologically sustainable timber industry. This becomes a shared vision.
- A town going forward. The highway to stay. Return of IDFA area to harvest.

Reaction to forest use options

Deferred areas remain available for conservation and other uses

What might be some of the social impacts in Bulahdelah if forest areas currently deferred become available for conservation and recreation uses?

The tables below detail the participants comments which have been charted to reflect the way they were prioritised.

Positive social impacts	Negative social impacts
<ul style="list-style-type: none">▪ Rethinking of employment for tourism; we have to maintain roads and find ways to make money from the reserve system▪ More area might allow us to make more money (from the government?)	<ul style="list-style-type: none">▪ State forests do maintenance. National parks need a lot more money to manage fragile areas and roads▪ Fires in forest areas are manageable. In national parks they're not. Cost to the community and to employers for volunteers to attend fires▪ Shire doesn't have money to maintain roads so this reduces access to national parks and affects tourism▪ People making decisions etc▪ Dislocated workers felt they had been doing something wrong▪ Not much impact re employment for ten years▪ Will the environment sustain increased tourism numbers?▪ Net loss of real jobs in State forests and mills that won't be replaced by tourism

Deferred areas remain available for the timber industry and other uses

What might be some of the social impacts in Bulahdelah if forest areas currently deferred become available for industry and other uses?

Positive social impacts	Negative social impacts
<ul style="list-style-type: none">▪ Continuing presence of timber industry, investment and value adding gives security of employment▪ People involved in timber were aware of inter-generational equity. Can still have timber and tourism▪ Less people on social security▪ Social life in pubs and clubs will revive because workers will have money to spend e.g. bowling club affected by loss of woodchip market▪ Secure job takes stress off home life▪ Infrastructure of schools secure▪ Ecotourism can exist as well as forest industry	

Positive social impacts	Negative social impacts
	<ul style="list-style-type: none"> ▪ Heavy machinery etc. has more impact than feet ▪ Hinders plantation development ▪ Lose potential for major ecotourism development around the town — ecological losses

If 50% deferred areas are available for industry and 50% deferred areas are available for conservation and recreation:

Positive social impacts	Negative social impacts
<ul style="list-style-type: none"> ▪ People involved in timber were aware of inter-generational equity. Can still have timber and tourism ▪ Ecotourism (e.g. Myall Lakes) with everybody happy but not at the expense of timber in the town ▪ Everybody will be partially happy 	<ul style="list-style-type: none"> ▪ Not enough resource — thresholds down and industry would close or fall over the viability line ▪ Everything has impact; load on water / sewerage system with tourism ▪ Sustainable ecotourism — will the environment handle tourism numbers?

Case study area — Dungog

History of settlement

Dungog is located on the upper reach of the Williams River in the Mid Hunter Valley of New South Wales. Its name is a derivation of the local Aboriginal name ‘Tunkok’ meaning ‘place of thinly wooded hills’.

The Gringai tribe lived in the area before white settlement in the early 1800s. The first white settlers in the area were farmers and cedar cutters arriving around the 1820s, forming a village which was named in 1834. In 1838 a military outpost was located in Dungog to deal with bushranging in the area.

Not long after white settlement a variety of crops were grown including wheat, corn and tobacco. However, over a period of time the district became known for its timber and dairy products, with a dairy cooperative being formed in 1905. As Dungog prospered a rail line was built to the town (1911) and electricity and telephone connections were made in 1917.

Today’s population is concentrated around the four major settlements of Dungog, Clarence Town, Paterson and Gresford, with Dungog as the base for a large number of LGA wide services (Website — Any Point Australia, Dungog; Dungog Visitors Information Centre, 1998).

Population

In 1996 Dungog had a population of 2181, a loss of six people since 1991. Aboriginal and Torres Strait Islander people made up 2.11% of the population. The median age was 39 years and the dependency ratio 42.73% (ABS).

Dungog selected characteristics

	Male	Female	Total
Total population	1059	1122	2181
Aged 15 years and over	824	889	1713
Aboriginal	21	22	43
Torres Strait Islander	0	3	3
Both Aboriginal and Torres Strait Islander	0	0	0
Australian-born	1004	1065	2069
Born overseas:			
Canada, Ireland, NZ, South Africa, UK and USA	18	15	33
Other country	7	12	19
Total	25	27	52
Speaks English only and aged five years and over	953	1024	1977
Speaks language other than English and aged five years and over	7	7	14
Australian citizen	1029	1094	2123
Australian citizen aged 18 years and over	746	814	1560
Unemployed	57	33	90
Employed	445	313	758
In the labour force	502	346	848
Not in the labour force	310	529	839
Unemployment rate	11.4	9.5	10.6
Enumerated in private dwellings	1033	1085	2118
Enumerated in non-private dwellings	26	37	63
Persons enumerated same address five years ago	598	670	1268
Persons enumerated different address five years ago	353	355	708
Overseas visitor	0	0	0

Source: ABS 1996 Census of Population and Housing

Major industries in the township of Dungog

The town of Dungog is the largest in the LGA and the service centre for smaller communities and the rural areas. The major industries are retail trade (14.85%), manufacturing (10.48%), education (10.61%), construction (9.02%) and health and community services (8.22%) (ABS: 1996).

In 1996, 47 people living in Dungog were employed in the timber industry, 12 in forestry and logging, 31 in sawmilling and timber dressing and four in other wood product manufacturing. There was a slight decline (five jobs) in employment in this industry between 1991 and 1996 (ABS: 1996).

The timber mill at Maxwell's Creek which employs between 30 and 40 people is the largest employer in manufacturing in the area.

Industry by employment in the Local Government Area

The major industries by employment in Dungog LGA were agriculture, forestry and fishing (17.56%), retail trade (12.51%), manufacturing (9.41), education (8.65%), construction (7.33%) and health and community services (7.23%) (ABS).

The agricultural industry is largely based on forestry, dairying, as well as grazing and beekeeping. Manufacturing is closely linked with local primary produce including forest products so that these two categories form an important part of the economic base of the area. In 1996, 75 people in the LGA were employed in the timber industry, 20 in forestry and logging, 42 in sawmilling and timber dressing and 13 in other wood product manufacturing (ABS).

Tourism is also playing an increasing part in the economy of the shire. In the period 1996–97 an estimated 82 000 people visited the area, an increase of 23 000 from 1994–95, and spent \$16 million compared to \$11 million in 1994–95 (Tourism NSW). Recreation and tourism activities are focused on the natural environment such as the Barrington Tops National Park, State forests and the rivers.

In 1996 the unemployment rate for Dungog was higher than for the LGA. The unemployment rate for the township was 10.6%, and for the LGA 8.7% (ABS: 1996).

The following table compares industry by employment in Dungog township and in the Dungog LGA (ABS: 1996).

Industry	Total % Dungog	Total % Dungog LGA
Agriculture, forestry, fishing	4.11	17.56
Mining	0	1.42
Manufacturing	10.48	9.41
Electricity, gas, water	3.05	1.52
Construction	9.02	7.33
Wholesale trade	3.71	3.37
Retail trade	14.85	12.51
Accommodation, cafes & restaurants	6.90	5.32
Transport & storage	5.44	4.59
Communication services	2.52	1.42
Finance & insurance	2.12	1.58
Property & business services	5.70	6.14
Government administration & defence	7.03	4.29
Education	10.61	8.65
Health & community services	8.22	7.23
Cultural & recreational services	0.80	0.99
Personal & other services	2.65	2.87
Not classifiable	0.40	1.52
Not stated	2.39	2.28

Income

In 1996 the median annual individual income range was \$10 400 to \$15 600 and the median annual household income range was \$15 600 to \$26 000. Approximately 2% of individuals

earned over \$50 000 per annum. The median annual individual income for New South Wales was \$15 500 and the household income was \$34 060 (ABS: 1996).

Community infrastructure

Health

Dungog has a range of health services in the town including two pharmacies, two doctors, an ambulance station, accommodation for mobile adults with developmental disabilities, a baby health centre, and a public hospital. The hospital provides a variety of diagnostic services and medical facilities as well as 24 hour accident and emergency services and in-patient care.

Other services provided through the hospital by the Hunter Area Health Service on a part-time basis are physiotherapy, speech therapy, a social worker, occupational therapy, podiatry, an adolescent and child psychologist, pain management clinic, drug and alcohol counselling, a dietitian, a day care centre, therapy groups, community nursing, equipment hire, sexual assault clinic, and a syringe exchange program (Dungog Shire Council Directory of Community and Welfare Services, 1997).

Education

Dungog has a State primary and high school, a Catholic school and two preschools. The primary school had a decrease of 35 enrolments between 1993 and 1998 to 300, but the number of teachers employed remained the same at 15. The high school's enrolments have increased by 66 during the same period to 664 in 1998. Teachers increased from 45 to 49 (NSW Department of Education and Training).

The Catholic school (K–6) had 49 children enrolled in 1996, approximately the same number as in 1991. The numbers of children attending preschool have dropped by 19 to 30 in the same period (ABS).

Housing

In 1996, 49.58% of dwellings in Dungog were fully owned, 8% less than in 1991 (57.66%). Dwellings being purchased also declined from 18% to 16.77%, while the number of rented dwellings increased 1% from 19.43% to 20.49%. There were 75 unoccupied private dwellings in 1996, representing 7.96% of the total dwellings in the town (ABS).

Communications

The Dungog community has its own local newspaper.

Community services

Dungog has a variety of community and welfare services based in the town. There are two playgroups, vacation care and a family day care service for children. Young people are catered for through a community youth service, Scouts, Girl Guides and Brownies. Services for people who are aged or who have a disability include Dungog and District Neighbourhood Aid, community transport, a private accommodation service, a community hostel and nursing home, a food service, home care, Telecross, a care and share group, home based palliative care, and respite care.

Other community services include police and emergency services, three banks, a post office, a range of sporting facilities including a swimming pool, several services clubs, and an adult education service (Dungog Shire Council Directory of Community and Welfare Services, 1997).

Annual events

Dungog has many well-attended local events organised by the community. These include the Dungog Annual Show, Blueys Country Barn Dance and Barbecue, Dungog Shire Heritage Trail, a Pedal Fest, the Orchid Glen Nursery Day, Dungog/Gresford Hoof and Hook, and the Dungog Camp draft and Rodeo. Two events that are held twice a year are the annual Horse Trials and the Picnic Race Day (Dungog Visitors Information Centre).

Community perspectives in Dungog

There were no community workshops held in Dungog, but consultations with community leaders have provided a history of recent change. Over the last 10 to 15 years there has been a gradual change in economic sources for the community including an increase in tourism, diversification of agricultural industries and new businesses establishing in the town. New people have also arrived in town bringing new ideas.

The town is growing, there are no vacant shops and the new businesses that are setting up in town are doing well. The Boral Mill established a laminating plant in town five to ten years ago which employs six people, and Drover's Rural Supplies, a company producing cattle tags, employs up to ten people. The dairy factory which closed ten years ago is being converted into new light industrial space. There are still three banks in the town and a building society, but the banks have decreased staff numbers over the past few years.

The number of tourists visiting the town is increasing, attracted by the national parks and wilderness areas. Many visitors to the area stay at large tourist resorts near these attractions, but the roads to these pass through Dungog so the town benefits economically from them. The railway line which goes through the town allows visitors to make day trips from Newcastle.

A visitors information centre was opened two years ago as well as coffee and craft shops. People are also turning cottages into farmstay accommodation as an alternative source of income. The council is supporting the tourism initiatives and many of community groups are working together to promote tourism in the town.

The area, traditionally known for timber, beef cattle and dairying, is diversifying. Some primary producers are now growing olives, grapes and timber plantations. Some of the larger dairies still employ family members, but there is concern that the deregulation of the industry will have a negative impact on the industry.

There has been an increase of the numbers of people seeking a new lifestyle. Some of these people have come to retire or semi-retire, and started up cottage industries as a small income source. Other new people to the town work in Maitland, Singleton or Raymond Terrace.

Case study area — Gloucester

History of settlement

Gloucester is located in the north east of the Hunter Region of New South Wales, 310 kilometres north of Sydney. It lies in a fertile valley between the Bucketts and Mograni Ranges and is the major commercial and urban centre of the area.

In the 1830s the Australian Agricultural Company was mainly responsible for the first white settlement in Gloucester. The company tried sheep in the area but found more success with cattle and horses.

The township of Gloucester was officially established in 1855, however it was not until the early 1900s that building and industry really began in the town. The first subdivisions occurred in 1903. Between 1904 and 1906 the School of Arts was built, the first paper was established (the *Gloucester Advocate*) and the Avon and Barrington butter factory began operations. Both the newspaper and butter factory are still in operation today.

Gloucester township is the main service centre for the surrounding district, with a shopping centre, industries, schools, a hospital and council headquarters located in the town (Gloucester Community Profile 1997–1999).

Population

In 1996 the population of Gloucester was 2634, an increase of 6.3% since 1991. In 1996 2.5% of the population identified as Aboriginal or Torres Strait Islanders, slightly above the state average of 1.7%. The median age of the population in 1996 was 38 years and the dependency ratio was 42.73% (ABS).

Gloucester selected characteristics

	Male	Female	Total
Total population	1269	1365	2634
Aged 15 years and over	952	1059	2011
Aboriginal	31	32	63
Torres Strait Islander	0	0	0
Both Aboriginal and Torres Strait Islander	3	0	3
Australian-born	1143	1233	2376
Born overseas:			
Canada, Ireland, NZ, South Africa, UK and USA	48	40	88
Other country	22	20	42
<i>Total</i>	70	60	130
Speaks English only and aged five years and over	1106	1192	2298
Speaks language other than English and aged five years and over	15	12	27
Australian citizen	1207	1295	2502
Australian citizen aged 18 years and over	838	934	1772
Unemployed	50	39	89
Employed	529	360	889
In the labour force	579	399	978
Not in the labour force	353	644	997
Unemployment rate	8.6	9.8	9.1
Enumerated in private dwellings	1214	1315	2529
Enumerated in non-private dwellings	55	50	105
Persons enumerated same address five years ago	676	734	1410
Persons enumerated different address five years ago	447	475	922
Overseas visitor	0	4	4

Source: ABS 1996 Census of Population and Housing

Major industries in the township of Gloucester

The major industries in Gloucester reflect the town's importance as the largest service centre in the local government area. Gloucester has a wide range of retail businesses and services with general retail businesses estimating that up to 20% of their business could be attributed to people involved in the timber industry (ERM Mitchell McCotter, 1995).

Manufacturing in Gloucester is also closely linked to primary industry. For example Australian Consolidated Foods (Dairy Farmers) factory in Gloucester, which employed 39 people in 1998, not only buys its raw product from dairy farmers in the area but relies on sawdust from the local sawmills to fire its boilers.

In 1996 the employment in major residents of Gloucester were mainly employed in retail and wholesale trade (19.8%), manufacturing (12.44%), health and community services (10.29%), accommodation, cafes and restaurants (7.58%) and education (7.01%).

Since 1991, almost one-third of the people working in the timber industry in the town have lost their jobs. In 1991 102 people were directly employed in the timber industry, compared to 70 people in 1996. In March 1998 the Boral Mill, which employed 31 people, closed.

Industry by employment in the local government area

Gloucester Shire's economic history has been based on the primary industries of timber, beef and dairying. However, over the past two decades there has been a decline in jobs in primary industries, both timber and farming. Many sawmills in the area have closed and logging contractors have left the industry as well. The beef and dairy industries have experienced periods of drought and low commodity prices, contributing to the decline in profitability. Between 1981 and 1996 the numbers of people employed in primary industries have dropped by almost 6% (Gloucester Community Profile 1997–99).

The LGA has had a boost to its economy through two new coal mines opening, an increase in tourism and new industries such as fish and rabbit breeding. The number of tourists visiting the LGA has increased by an estimated 16 000 between 1994–94 (53 000) and 1996–97 (69 000), with a corresponding increase in expenditure from \$9 million to \$13 000 during this period (Tourism NSW).

In 1996, 126 people were employed in the timber industry in the Gloucester LGA, 51 in forestry and logging, 87 in sawmilling and timber dressing and four in other wood product manufacturing (ABS).

Comparison of employment figures between the town and the LGA highlight the difference in employment numbers in primary industries with 4.52% in the town and 22.87% in the LGA. Of greater importance to the town were employment in retail (3.65% more) and transport and storage (2.22% more). All other categories showed less than a 2% difference between the LGA and township.

Unemployment numbers for the township and the LGA were very similar in 1996; Gloucester's unemployment rate was 9.1%, the LGA was 9.7%.

The following table compares industry by employment in Gloucester township and in the Gloucester LGA (ABS: 1996).

Industry	Total % Gloucester	Total % Gloucester LGA
Agriculture, forestry, fishing	4.52	22.87
Mining	5.09	4.30
Manufacturing	12.44	10.47
Electricity, gas, water	0.34	0
Construction	5.77	4.63
Wholesale trade	4.19	3.80
Retail trade	15.61	11.96
Accommodation, cafes & restaurants	7.58	6.28
Transport & storage	6.90	4.68
Communication services	1.13	0.88
Finance & insurance	2.60	1.87
Property & business services	4.86	3.64
Government administration & defence	5.32	4.52
Education	7.01	6.12
Health & community services	10.29	8.65
Cultural & recreational services	0.68	0.33
Personal & other services	2.83	1.98
Not classifiable	0.68	0.50
Not stated	2.15	2.53

Income

In 1996 the median annual individual income range was \$10 400 to \$15 600 and the median annual household income range was \$15 600 to \$26 000; 3.12% of individuals earned over \$50 000 per annum. The median annual individual income for New South Wales was \$15 500 and the household income was \$34 060 (ABS 1996).

Community infrastructure

Health

Gloucester has range of health services including a hospital, community health service, ambulance service, four doctors, a visiting surgeon, a pharmacy and a dentist.

The hospital caters for the medical needs of the community through provision of services such as physiotherapy; X-rays; aids for disabled people; and geriatric, paediatric and palliative care. This service is augmented by the community health service that offers assistance in drug and alcohol counselling, domiciliary nursing, social work, early childhood, diversional therapy, speech therapy, mental health, occupational therapy, day care, palliative care, audiology, health promotion, and library services (Gloucester Community Profile 1997–1999).

Education

Gloucester has a State high school, a State primary school, a Catholic primary school, a preschool and a community training centre. Most of the students attend the State high and primary schools.

Enrolments at the State high school increased between 1993 (490) and 1998 (525) as did the number of teachers (from 39.7 to 42.2). The State primary school had decreasing enrolments

during the same period, from 426 to 374 and teacher numbers decreased from 19.23 to 16.85 (NSW Department of Education and Training).

There was a decrease in children attending preschool over a five year period from 1991 (49) to 1996 (43) (ABS).

Housing

Between 1991 and 1996 there was an increase of 24 fully owned dwellings in Gloucester. At the same time the percentage of dwellings being purchased decreased slightly to 18.6%. The number of rented dwellings increased by approximately 2% to 26.5%.

There were 82 unoccupied private dwellings in the town, representing 7.39% of the total private dwellings.

Communications

The town is served by a local newspaper, the *Gloucester Advocate*, established in 1905.

Community services

Gloucester has numerous community services aimed at assisting various groups in the town. There are two childcare centres, a play group, a family day care service and vacation care. Other activities include Little Athletics, Guides and Brownies, Scouts and Cubs. For youth there are a number of sporting groups and church youth groups. The Gloucester Youth Centre provides basic counselling, group work, advocacy, referral, entertainment and a general social venue.

Accommodation for aged people is catered for through 18 council owned units, seven units for the aged, a nursing home able to accommodate 25 elderly people, and a 20 unit hostel for aged and disabled people. The hospital also has 15 beds for geriatric care. The hospital has bus to transport aged people from the hospital's activity centre and there is a senior citizen's centre providing a range of activities and entertainment. Other services are available to assist elderly and disabled people to maintain a standard of independent living.

Gloucester has a high level of community involvement. There are nine community service organisations and 16 social and general voluntary organisations. Various voluntary committees and community service organisations include self-help groups, support groups, sporting organisations, art and craft groups, and a historical society. Eight churches provide for the spiritual needs of the community.

The neighbourhood centre provides community services such as information, referral, advocacy and assistance to people in various crisis situations. Other crisis assistance is provided by the Samaritans Foundation and the St Vincent de Paul Society.

The town has a police station, a fire station and State Emergency Services unit, as well a library, tourist office, six sports grounds and an indoor recreation centre and several community halls (Gloucester Community Profile 1997–99).

Annual events

Annual events in the town include the agricultural show, a Shakespearian Festival, Australia Day Celebrations and the Mountain Man Triathlon.

Community perspectives in Gloucester

There were no community workshops held in Gloucester, but consultations with community leaders have provided the following information:

- There is a perception that the closure of the Boral mill had a major impact on the town, but this impact may be disguised by increasing employment at the coal mine which opened 3–4 years ago, and is currently employment about 120 people. These workers have high disposable incomes and put money back into the town.
- Gloucester is capitalising on its positioning between the coast and World Heritage areas. There has been an increase in tourism operators, ecotourism resorts, canoeing, farmstays, and other tourist attractions in the area. A tourism information centre has been built and a full-time tourism officer appointed. The financial intake for the 1998 October long-weekend was in excess of the previous Easter's trading.
- The decline of the timber industry in Gloucester acted as a 'wake-up call' to Gloucester to diversify and become less reliant on two or three industries. The community has responded with tourism, beef production initiatives.

Case study area — Kempsey

History of settlement

The town of Kempsey is located approximately half way between Sydney and Tweed Heads on the mid north coast of New South Wales. It is situated on the Macleay River, fifteen kilometres from the coast, and is the commercial centre of the Macleay Valley.

The area was first occupied by the Dangaddi people before Enoch Rudder, a Sydney cedar merchant, decided to settle on the Macleay. He named his home Kempsey Villa after a town in Worcestershire, England.

The town of Kempsey originated when Rudder subdivided part of his land to create a private village that serviced his pastoral interests and the timber getters who were working the forests of the Kempsey hinterland. A government village was set up at West Kempsey in the 1850s and the two were amalgamated to form a township soon after (Kempsey Community Profile, 1998).

Population

In 1996 the population of Kempsey was 8630, a decrease of 4.52% from 1991 when the population was 9039. The median age of the population of Kempsey in 1996 was 35 and dependency ratio 41.62% (ABS 1996).

Kempsey has the highest Aboriginal and Torres Strait Islander population on the North Coast with the 1996 census indicating 1166 people or 13.51% belonging to these groups. The average North Coast Aboriginal and Torres Strait Islander population was 2.7%.

Kempsey selected characteristics

	Male	Female	Total
Total population	4061	4569	8630
Aged 15 years and over	3000	3511	6511
Aboriginal	526	619	1145
Torres Strait Islander	3	3	6
Both Aboriginal and Torres Strait Islander	8	7	15
Australian-born	3676	4154	7830
Born overseas:			
Canada, Ireland, NZ, South Africa, UK and USA	114	122	236
Other country	51	60	111
<i>Total</i>	<i>165</i>	<i>182</i>	<i>347</i>
Speaks English only and aged five years and over	3492	3950	7442
Speaks language other than English and aged five years and over	47	44	91
Australian citizen	3831	4324	8155
Australian citizen aged 18 years and over	2621	3123	5744
Unemployed	351	193	544
Employed	1377	1105	2482
In the labour force	1728	1298	3026
Not in the labour force	1178	2115	3293
Unemployment rate	20.3	14.9	18
Enumerated in private dwellings	3902	4357	8259
Enumerated in non-private dwellings	159	212	371
Persons enumerated same address 5 years ago	2003	2306	4309
Persons enumerated different address 5 years ago	1508	1699	3207
Overseas visitor	6	10	16

Source: ABS 1996 Census of Population and Housing

Major industries in the township of Kempsey

In 1996 the retail and wholesale sectors employed almost 25% of the town's population. Other major industries were health and community services (12.11%), and manufacturing (11.35%) (ABS). Manufacturing firms include Nestles, Akubra, King Gee, Boral Bricks, Australian Pyrotechnics and Kempsey Timbers.

However, in the period 1991 to 1996, some industries showed large declines in employment: manufacturing declined by 20.6%, electricity, gas and water by 53.8%, communications by 32.7%; and agriculture, forestry and fishing by 19.4% (ABS 1996).

There has also been a decline in the number of people employed in the timber industry during this period. In 1996 the timber industry employed 39 residents of Kempsey (14 in forestry and logging, 16 in sawmilling and timber dressing and nine in other wood product manufacturing), a reduction of 23 people from 1991. The majority of these (20 people) were in sawmilling and timber dressing (ABS).

Employment in manufacturing for the next census may show a further decline. In 1998 the Midco smallgoods factory, that had employed 250 people, closed.

Industry by employment in the local government area

The wholesale and retail sector was also the largest employer in the LGA (20.35%). Other major industries were health and community services (11.46%) and manufacturing (11.25%). These figures have changed very little since the 1991 census (ABS: 1996).

Also of importance to the LGA were primary industries (8.6%), with the major activities being beef cattle, dairying and timber. The timber industry employed 133 people, 41 in forestry and logging, 60 in sawmilling and timber dressing, and 32 in other wood product manufacturing. This accounts for 8.31% of people employed in primary industries and manufacturing (ABS 1996).

Tourism is a growing industry in the Kempsey LGA. In 1996–97 there were an estimated 406 000 visitors to the area, an increase of 16 000 since 1994–95. Tourist expenditure increased by \$9 million in the same period (Tourism NSW).

Unemployment in the Kempsey LGA was higher than in the township of Kempsey. In the LGA, the combined unemployment rate was 19.6%; the unemployment rate in Kempsey was 18%. These figures were much higher than the State average of 8.8% (ABS 1996).

The following table compares industry by employment in Kempsey township and in the Kempsey LGA. (ABS 1996)

Industry	Total % Kempsey	Total % Kempsey LGA
Agriculture, forestry, fishing	2.17	8.60
Mining	0.24	0.34
Manufacturing	11.3	11.25
Electricity, gas, water	1.20	1.25
Construction	6.68	6.84
Wholesale trade	3.94	3.38
Retail trade	20.90	16.97
Accommodation, cafes & restaurants	5.91	6.14
Transport & storage	4.22	4.08
Communication services	2.82	2.52
Finance & insurance	2.41	2.15
Property & business services	6.28	5.54
Government administration & defence	4.91	4.25
Education	7.16	7.87
Health & community services	12.11	11.46
Cultural & recreational services	1.13	1.22
Personal & other services	3.86	3.45
Not classifiable	0.64	0.58
Not stated	2.09	2.12

Income

In 1996 the median annual individual income range was \$10 400 to \$15 600 and the median annual household income range was \$15 600 to \$26 000. Approximately 1.08% of individuals earned over \$50 000 per annum. The median annual individual income for New South Wales was \$15 500 and the household income was \$34 060 (ABS 1996).

Community infrastructure

Health

Kempsey has a hospital with 104 beds, providing general acute care such as medical, surgical, maternity and paediatric. The hospital has five staff doctors and two specialists. In the town there are approximately 13 general practitioners and two specialist doctors. The town also has an ambulance service.

Community Health services in Kempsey include community home nursing, women's health, school screening, palliative care, early childhood, family planning, mental health, health promotion, drug and alcohol counselling, aids/HIV counselling, dietician, speech therapists, dental clinic, community rehabilitation, sexual assault, aids for disabled people, continence advice, aged care assessment, and counselling for families and adolescents.

There are two Aboriginal education officers employed through community health. Durri Aboriginal Medical Service provides a range of medical and para-medical services (Kempsey Council's Community Profile, 1998).

Education

Kempsey has two State high schools, a Catholic high school, three State primary schools, a Catholic primary school, a TAFE college and three preschools.

In 1998 a total of 1057 children in Kempsey attended State primary school, 12.35% less than in 1993. In the same period the State high schools also had a decline in enrolment of 7.51%, with 1797 enrolled in 1993 and 1662 in 1998. The total number of teachers in State schools in the town remained the same at approximately 188.5 (NSW Department of Education and Training).

In 1996, 158 students attended the Catholic primary school and 109 attended the Catholic high school. These figures have remained stable since 1991. In the same year 175 children in Kempsey attended preschools, 20 less than in 1991 (ABS).

Full time enrolments at TAFE have increased by more than half from 76 (1991) to 119 in 1996. However, part-time enrolments have decreased significantly during the same period by 65 to 150 students.

Three schools in Kempsey receive funding under the Disadvantaged Schools Program. They are Kempsey South Primary School, Kempsey West Primary School and Kempsey High School.

Housing

The number of people who owned their own homes in Kempsey decreased by 5% between 1991 (44.34%) and 1996 (39.34%). There was also a decline in the number of dwellings being purchased from 17.08% (1991) to 14.41% (1996). The number of dwellings being rented declined as well from 34.41% (1991) to 33.72% (1996) (ABS).

In Kempsey the median monthly housing loan repayment was \$607 and the median weekly rent was \$85. There are 263 unoccupied private dwellings in the town, representing 7.41% of the total private dwellings.

Communications

Kempsey has three radio stations: ABC, 2MC (North Coast) and an FM station.

Community services

Most community services in the LGA are located in Kempsey. These services include 13 youth, six church groups, two employment, five law and order, 17 children's (including eight specialist Aboriginal), 37 sporting groups, six service clubs, 23 community development projects for Aboriginal people, and five community workers. There are 21 aged care services and 22 services for people with disabilities (Kempsey Council's Community Profile, 1998).

Kempsey has numerous government departments located in the town including the Department of Community Services (area and local offices), Social Security, Department of Housing, Juvenile Justice, Conservation and Land Management, Forestry, and Probation and Parole (Kempsey Community Profile, 1998).

Annual events

Kempsey's annual events include the Millbank River Festival, the Kempsey Agricultural Show, the Kempsey Marathon, the Kempsey International Off Road Race, the Kempsey All Star Country Music Festival, and the Kempsey Truck Festival.

Outcomes of Kempsey community workshop

(Held: 25 August 1998)

Groups represented: NSW Farmers, Kempsey Shire Council, State forests, Nature Conservation Council, Ministers Fraternal, timber industry, Aboriginal community, Total Catchment Management.

Significant events in Kempsey since 1980

Year	Event
1980s	Decline in agriculture and associated subdivisions. Deregulation of dairying Movement into area of lifestylers
1980s	Closure of lots of businesses and government instrumentalities and offices. Getting worse Train services gone
1980s	New industries e.g. Kempsey Timbers — modern approach
1980	Influx of new residents to marginal lands and hinterlands
1980	Dramatic shift in timber industry. Few in sleeper industry now. 1980 ~200 working in the bush. Now couple of dozen
1984 & 1986	Telstra and North Power left town, took 60 families. Related to government's regionalisation policy
~1986	SEPP Wetlands, Floodplain Legislation. Affects Council regulations. Leads to uncertainty in planning and fear of litigation
1986	Sesquicentenary
1986	New high school built at Midvale
1990s	Drought conditions TAFE downgraded. Brain drain to Port Macquarie
1990	WIGA food tree park established
1990s	Decline in 'family values', increased no. of single parents, breakdown in law and order

Year	Event
1995	Influx of chain stores has affected community, not necessarily bad Port Macquarie Hospital built Creation of national parks and wilderness areas in region Regionalisation process via Greiner Government. Not picked as regional centre Taree bypass — impact on some areas but benefits to Kempsey and Coffs Harbour Pacific Highway upgrade Removal of oil terminal at South West Rocks
1996	Boorinjugan Nursing Home and Hostel built — largest rammed earth construction in Southern Hemisphere. Built for indigenous needs. Also a training institution
1996	Steps taken towards reconciliation
1996	Dunghutti Native Title — first on Australian mainland

How did the community manage these events

Positive event — new industries e.g. Kempsey Timbers, nursing home, pyrotechnics

- Booroongen Djugan (Nursing Home) — Community need identified from within. Steering Committee examined the need and lobbied the Department of Aging. Was the start of basic services like a bus taking people into town for meals, and getting health workers to do tests. The focus was on developing a nursing home but doing other things at the same time. The nursing home is community-controlled. A core group drove the vision. While it was mostly government funded, there was also ‘in kind’ support from various chambers and businesses. Innovative buildings. Potential to expand training. Koori art and cultural themes within the building. About 60 nursing home beds and 80 in hostel accommodation.
- Timber: Regional opportunities to reforest the coast. This area can grow trees and there is already a skilled bush labour force. Need to capture and reforest and preserve bush. Reclaim land including private land. Need plantations, industry showing timber is here for the long term, certainty for harvesting of plantations.
- New issue of carbon credits from State forests. Joint ventures — State forests with private owners.

Negative event — regionalism/government offices

- Depressing. In the past Kempsey was *the* regional centre. Economic rationalism — moved. Department of Urban Services and Planning identified Coffs Harbour and Port Macquarie. TAFE moved to Taree / Port Macquarie. Kempsey Hospital is a grade three and specialists are at Port Macquarie. We’ve lost twelve Telecom jobs which had a big effect in a town this size. State Forests moved too. Removal of catering and laundry from hospital too.
- Humanitarian aspect is bypassed. It’s causing family breakups. We [local government] have been appealing to the Premier but are being snubbed. Community doesn’t protest. Lost morale. The friendly small place has gone. There’s a community perception that talk is a waste of time and that an exercise like this won’t make a difference. We have lost faith. The kids don’t have a future. There are too many ‘blood fests’.

Community feelings about Kempsey

- Positive community. Kempsey is dying. There's nothing here. No jobs.
- Positive attitude but lots of shades of crime. Have to be more aware of personal safety.
- I was born, raised and trained here. It's come a long way but it's a dying town with removal of government offices and employment. The spirit of community is creating opportunities, for example Community Development Employment Program has created sustainability with jobs and enterprises, reconciliation and revival.
- It's a good community. Came for four years and still here twelve years later. A split on racial grounds and between employed and not employed. Employed people are more positive. Unemployed have a morale problem and no work ethic with no family members working. Fifty-fifty split.
- It has always been a conservative community. It's difficult for former regime to accept change. Resilient and growing community. Compared with many more affluent communities we are proud and there's lots of plusses but its difficult not to feel dependent on government. We need them to speak with us.
- Respect is important. It's an innovative area but will it continue? The lower socioeconomic group has split and there's lots of "can't"s. There's a morale problem and the town is polarised.
- Generous and talented community but the talent has had to go elsewhere to get recognition particularly with the artistic community that needs marketing. There's a high number of volunteers.
- There's stagnation. Hard cold demographic facts are that it has high unemployment but its holding its own.
- Been here 42 years. Like the climate. It's a giving community. The sesquicentennial committee raised \$60 000 for a hydrotherapy centre.
- We get throttled by governments. We're tired of fighting — we've had wilderness areas thrust on us. Riparian zones affect landholders because of the fencing of the rivers and streams 40 m back.
- Chose to come here 17 years ago. Found it socially great but economically a bit hard. Historically a self reliant community. Used nature reserves and timber when beef dried up. The community is reluctant to change.
- Learning more about the indigenous people since I moved here. The indigenous culture can enrich us. Indigenous people are an asset not to be exploited.

Visions for Kempsey

What are some of the visions for the future of Kempsey?

- Not reliant on social security.
- Positive attitudes, look at things laterally.
- Genuine reconciliation, hope for kids.
- Strengthening of economic and employment situation.
- Hope I'm still here in Kempsey.
- Environment that is 'people friendly'.
- Future in tourism and hospitality. Needs training and refining to achieve this. Develop showcase for the valley 'Made on the Macleay'.
- Opportunities — geography: half way between Brisbane and Sydney. Good rail and access roads, good water supply and labour resource.
- Go back to 42 years ago when you could leave the door open.
- Sustainability, economic independence. Wealth to create a harmonious and just society.
- Social welfare services and support for sustainable and viable industries.
- Healthy environment, air and water to swim in and drink and healthy soils.
- Need to capitalise on education facilities and take advantage of climate.

Reaction to forest use options

The tables below detail the participants comments which have been charted to correspond with the way they were prioritised.

Deferred areas remain available for conservation and other uses

What might be some of the social impacts in Kempsey if forest areas currently deferred become available for conservation and recreation uses?

Positive social impacts	Negative social impacts
<ul style="list-style-type: none">▪ None, as we have enough national parks and wilderness in the Shire.▪ Make afforestation more possible and use trees as a crop. Need to force the issue.▪ New types of management plans over all forest types.▪ Force councils and national parks to build and maintain access roads.▪ More money to national parks to manage forests.▪ Industry has to get smarter. More training and higher pay.▪ Keep biodiversity bank alive — seeing things grow.▪ Tourists come from overseas to the wilderness. Outside the built environment, the tourism dollars are not as visible.▪ In the future we might harvest smarter.	<ul style="list-style-type: none">▪ Timber mills will close if all Interim Deferred Areas are reserved.▪ Once an area is reserved, the timber infrastructure is gone.▪ Rid national parks of feral animals — at the moment this is not done.▪ Reduces revenue from State forests and increases costs of national park management.▪ Reduces access for people with disabilities. National Parks are not just for walkers.▪ State forests maintain roads.▪ Creating reserves hasn't worked. No one species has gone off the endangered list. Why are we persisting with that strategy when we need to supplement and complement it?▪ Plantations may not be in Kempsey because of unsuitable soils.▪ May be no impacts if timber is not of high value.▪ Loss of leasehold use.▪ National parks have no fire policy or equipment for fire fighting.

Deferred areas remain available for the timber industry and other uses

What might be some of the social impacts in Kempsey if forest areas currently deferred become available for industry and other uses?

Positive social impacts	Negative social impacts
<ul style="list-style-type: none">▪ Four or five large processing centres so no synergy for plantations. Opportunities to increase habitat lost.▪ High value adding here for the long term.	

Positive social impacts	Negative social impacts
<ul style="list-style-type: none"> ▪ RFA sounds the bell regarding government intention for industry. We would plant and create the future resource. ▪ Keeps biodiversity in harvested areas. 	<ul style="list-style-type: none"> ▪ Fragmentation of State forests — efficiencies of management lost.

50% deferred areas are available for industry and 50% deferred areas are available for conservation and recreation

What might be some of the social impacts in Kempsey if 50% of currently deferred is available for industry and 50% is available for conservation and recreation?

Positive social impacts	Negative social impacts
	<ul style="list-style-type: none"> ▪ Render some State forests uneconomic as a result of splitting up. Extra management costs. ▪ Only four to five big mills left and some small ones. This will reduce viability of plantations. It depends on what species are available. ▪ Reserve system already catered for. This area already has enough national parks and wilderness areas for humans.

Case study area — Kendall

History of settlement

Kendall is located on the Mid North Coast of New South Wales and is part of the Camden Haven area of Hastings Shire. The town was originally known as Camden Haven but was given a change of name in 1891 to honour Henry Kendall who worked there as a local store keeper from 1876 to 1881.

Various milestones in the development of Kendall include the opening of the post office in 1875, the opening of a branch of the Bank of New South Wales (located at the post office), in 1895 and the opening of the telephone exchange in 1913.

An early account of Kendall describes it as ‘One of the strongholds of the northern timber trade, there being four mills there. Those mills give employment to a small army of puntsmen, snaggers, rivermen, lumberers, coasting seamen, sawmill hands, wharf labourers, engineers, teamsters, splitters and shinglers’ (*Sydney News*, December 6, 1980).

A private railway line for hauling logs was constructed in 1913 and ran between Lorne and the Camden Haven River at Kendall. Until the closure of the line in 1932 it provided a free passenger service as well.

Population

In 1996 the population of Kendall was 715, an increase of 1 since 1991 (ABS: 1991,96). Aboriginal and Torres Strait Islanders represent 2.38% of the total population. The median age in 1996 was 33, and the dependency ratio was 39.52% (ABS: 1996).

Kendall selected characteristics

	Male	Female	Total
Total population	355	360	715
Aged 15 years and over	257	260	517
Aboriginal	8	6	14
Torres Strait Islander	3	0	3
Both Aboriginal and Torres Strait Islander	0	0	0
Australian-born	333	325	658
Born overseas:			
Canada, Ireland, NZ, South Africa, UK and USA	9	14	23
Other country	6	5	11
<i>Total</i>	<i>15</i>	<i>19</i>	<i>34</i>
Speaks English only and aged five years and over	310	307	617
Speaks language other than English and aged five years and over	4	4	8
Australian citizen	345	342	687
Australian citizen aged 18 years and over	231	233	464
Unemployed	45	22	67
Employed	119	99	218
In the labour force	164	121	285
Not in the labour force	90	133	223
Unemployment rate	27.4	18.2	23.5
Enumerated in private dwellings	355	360	715
Enumerated in non-private dwellings	0	0	0
Persons enumerated same address five years ago	199	196	395
Persons enumerated different address five years ago	113	114	227
Overseas visitor	0	0	0

Source: ABS 1996 Census of Population and Housing

Major industries in the township of Kendall

The major industries in Kendall in 1996 were retail and wholesale trades (14.7%); manufacturing (10.83%); construction (9.58%); accommodation, cafes and restaurants (8.75%); health and community services (8.75%); and government administration and defence (6.67%). These figures demonstrate no significant differences from the 1991 census figures (ABS: 1996).

Kendall is becoming known as the 'craft capital' of the Camden Haven area, with the Kendall Craft Cooperative providing a retail outlet and workshop space. The fortnightly markets provide an outlet for sales of craft items. Also located at Kendall is the tourist attraction and bottling plant for Norfolk Punch, which sells all over Australia. (Camden Haven Guide, 1998).

Ten people living in Kendall were employed in the timber industry in 1996, whereas there were 17 in 1991 (ABS).

Industry by employment in the local government area

The retail sector in Hastings employed almost a quarter of the population (23.23%). Second in employment figures was health and community services (12.12%), followed by construction (8.27%), accommodation, cafes and restaurants (7.81%), property and business services (7.76%) and education (7.46%). These figures reflect the LGA's huge growth in tourism and 'retiree-ism'. As far as a comparison is possible, employment in all categories in the LGA was very similar to 1991 census figures (ABS).

Three hundred and twenty nine people in Hastings worked in the timber industry in 1996, 79 in forestry and logging, 150 in sawmilling and timber dressing and 100 in other wood product manufacturing.

Tourism is very important to the Hastings economy, with an estimated 834 000 people visiting the LGA in 1996–97, 48 000 more than in 1994–95 when 786 000 visited. Tourist expenditure also rose during this period by \$21 million, with tourists spending an estimated \$199 million in 1996–97 (Tourism NSW).

Unemployment in the Hastings LGA was much lower than in Kendall. In the LGA the combined unemployment rate was 16.1%. The combined rate for Kendall was 23.5%. These figures were much higher than the State average of 8.8% (ABS 1996).

The following table compares industry by employment in Kendall and in the Hastings LGA (ABS 1996).

Industry	Total % Kendall	Total % Hastings LGA
Agriculture, forestry, fishing	5.00	5.30
Mining	0	0.22
Manufacturing	10.83	7.49
Electricity, gas, water	1.25	1.05
Construction	9.58	8.27
Wholesale trade	1.25	4.92
Retail trade	12.92	18.31
Accommodation, cafes & restaurants	8.75	7.81
Transport & storage	10.00	2.83
Communication services	3.33	1.50
Finance & insurance	2.50	2.78
Property & business services	5.42	7.76
Government administration & defence	6.67	3.71
Education	3.75	7.46
Health & community services	8.75	12.12
Cultural & recreational services	0	2.15
Personal & other services	5.00	3.82
Not classifiable	1.00	0.76
Not stated	3.75	1.75

Income

In 1996 the median annual individual income range was \$8320 to \$10 400 and the median annual household income range was \$15 600 to \$26 000. No individuals earned over \$50 000

per annum. The median annual individual income for New South Wales was \$15 500 and the household income was \$34 060 (ABS: 1996).

Community infrastructure

Health

Kendall has no health services based in the town, however, Community Health in Laurieton provides outreach services such as an early childhood nurse, community nurses and paediatric speech pathologist and occupational therapists to Kendall. The mental health worker also makes home visits. The closest hospitals are at Port Macquarie and Wauchope (Hastings Community Services Directory, 1998).

Education

Kendall has a State central school and a preschool. The central school had an increase in enrolments of 24.56% between 1993 (578) and 1998 (720), and a corresponding increase in teaching staff of 8.25. There were 49.58 teachers at the school in 1998 (NSW Department of Education and Training).

Plans have been made for a new high school to be built at Kew, 2 kilometres away. Kendall Central School will then become a primary school.

Kendall also has a preschool with 62 children enrolled in 1998. The preschool is licensed for 100 places per week and has had all places filled for a number of years.

Housing

There was a decreased in the number of dwellings fully owned and being purchased in Kendall between 1991 and 1996. In 1991, 50.78% of dwellings were fully owned and 43.49% in 1996, a decrease of 7.29%. Dwellings being purchased decreased by 6.99% from 28.91% in 1991 to 21.92% in 1996. The number of dwellings being rented remained stable at 16.4% (ABS).

There were 35 unoccupied private dwellings in the town representing 12% of the total private dwellings (ABS).

Communications

Kendall is served by the *Camden Haven Courier* newspaper.

Community services

Kendall has very few publicly funded community services in the town. The nearest location for many services is Laurieton, the service centre for the Camden Haven area. Residents use other services at either Port Macquarie or Wauchope.

The closest aged accommodation is in Laurieton which has a hostel and retirement village. The Aged Care Assessment team in Port Macquarie makes home visits in Kendall.

Children's services include family day care and a playgroup, Scouts, Girl Guides and Brownies. Riding for the disabled is also located in Kendall.

Kendall has two halls, two clubs (CWA and Legacy), and a Catholic church.

The Kendall Show Society Markets are held once a month and the Kendall Country Market twice a month (Hastings Community Services Directory, 1998).

Annual events

The annual events in Kendall include the Claudia Ringland Memorial Dressage Competition, the Norfolk Punch Celtic Festival, the Camden Haven Show, the Camden Haven Music Festival and the Merry Monks of May.

Outcomes of Kendall community workshop

(Held: 26 August 1998)

Groups represented : Emergency Services, events organiser, sports, State forests, timber industry, education, Chamber of Commerce, Aboriginal community, youth, tourism, Landcare, farmers.

Significant events

Year	Event
1981	Learning exchange started in Kendall and went for 10 years. It has now moved to Laurieton. This is a trend
1982	First Land Council in the Hastings area — Biripi (Port Macquarie)
1983/84	Restoration of community hall
1985	Gibson Engineering lost jobs — this has happened since the national parks came. It used to provide service to forestry
1985 onwards	Loss of jobs in the timber industry and flow on. Herons Creek Mill decreased
1989	Loss of the pole yard at the railway (8–9 jobs) This used to supplement farm incomes
1988	Norfolk Punch produced in Kendall
1990 onwards	Aboriginal housing cooperative in Kendall called Ngamba
1991	Dismantling of river baths due to pollution and deterioration which led to the creation of the Kendall Pool Committee in 1992
1991	Staff lost from the railway and State forests to Wauchope
1991	Preschool moved from a hall into the State forests office
1994	Major flood in Kendall. Railway bridge was the only access
1994	The post office was privatised
1995	Closure of ANZ Bank
Mid 1990s	Plan to change the school site to be only a primary school and a new high school to be built at Kew called Camden Haven High School
1995	Creation of the annual Camden Haven Music Festival
1997	North Brother Mountain given its Aboriginal name, Dooragan. It became a national park and was a significant Aboriginal event
1998	Bicentennial events
1998	The final of the National Violin Competition held in Kendall. It has joint sponsorship through Kempsey Timbers and State forests
1998	Developing tourism. The formation of the Emerald Heartland Group and promotion of Norfolk Punch. Have had some media attention in the television program Getaway
2000	First flush in 2000 — new sewerage system

How did the community manage these events?

Positive event — cultural growth in Kendall

- 1980 Principal of the school held two evening classes, very successful and the P and C was invited to take over the learning exchange. Focuses on teaching art and craft.
- Markets were established as a fundraiser, funds from this bought a piano for the school. The markets carried on for many years in the school grounds and for the school benefit.
- Establishing a Craft Coop which leases old railway station office, recycling public buildings for public benefit.
- Influx of new people brought new ideas, hall renovation, led to revival of Arts Council, attracted Australia's leading stringed instrument maker. Australian violin championships were to be held in Kendall in 1998.

Negative event — loss of employment opportunities

- Young people are leaving the area as there is no employment opportunity. Losing focus to Laurieton e.g. shopping centre. The community struggles but doesn't manage. Many on unemployment and sickness benefits.
- Lots of trades people live here. Herons Creek mill had two shifts per day and this has been cut to one.
- From an Aboriginal perspective there is not much employment except for the National Parks and Wildlife service who employ people to teach Aboriginal history.
- The school has responded by operating more suitable courses and joint school/ TAFE training. For those in the 40 to 50 age group who have lost jobs there has been a loss of personal esteem and pride. Loss of business has had an effect on older people due to lack of public transport. This has also affected visits to families.

Community feelings about Kendall

How do you feel about Kendall?

- It's a nice quiet little town and a nice place to bring up kids.
- Great for art and I love the trees.
- I have a bed and breakfast out of town, I enjoy the tranquillity, it's very friendly.
- We chose Kendall for its unique atmosphere.
- It's a nice drive to work.
- Everybody knows each other and talks to each other. There's a sense of togetherness.
- I like the quieter pace, the slowness of development, planning and thinking time, with beautiful forests in the south and best climate.
- Positive climatic conditions.
- It's a quiet town and a nice place.
- Can't find a better place, climate, forest, community.
- Has a unique heritage and people. People choose to live here and make a choice of lifestyle.
- It's a nice place to be, easy to get in and out of e.g. by train.
- Almost perfect size community, with a nice setting and people. We feel we can do something to contribute.
- There's a good diversity of people, general acceptance and cultural awareness.
- Kendall is unaware of its rich Aboriginal cultural heritage and has a challenge of reconciliation.

Visions for Kendall

What are some of the vision for the future of Kendall?

- The sewerage comes.
- We want limited growth, not much bigger.
- Don't want rural subdivisions, put pressure on water supply and other services. We've lost very good farm land.
- Rural subdivisions no greater than half acre allotments.
- Rural areas should go to timber.
- More work for Aboriginal people especially youth. People more aware of Aboriginal culture.
- Kendall not commercialised as Laurieton, kept as a back town area.
- A few more people interested in the arts.
- State Emergency Services still going, to protect locals.
- Beautification of town, including landscaping and access to the river.
- Need more activities for youth. The river needs fixing, for public use and a clean river.
- A music festival, to put Kendall on the map one day.
- More independent businesses, with Kendall as a place to live and work.
- More cottage craft and industry — give visitors something to do and buy.
- A committee to oversee the 'beautification of the river' program.
- Kendall Show promoting rural culture.
- Improvement in public transport from Kendall to other areas.

Reaction to forest use options

The tables below detail the participants comments which have been charted to correspond with the way they were prioritised.

Deferred areas remain available for conservation and other uses

What might be some of the social impacts in Kendall if forest areas currently deferred become available for conservation and recreation uses?

Positive social impacts	Negative social impacts
<ul style="list-style-type: none">▪ Aboriginal cultural heritage valued▪ Increase in ecotourism▪ Increase in tourism▪ Possible increased employment because of heightened awareness and community access to areas▪ Biodiversity increased, animals etc. looked after well	<ul style="list-style-type: none">▪ Potential for access to be denied▪ Increased vulnerability to fire through lack of management▪ May affect horse trails and pony club

Deferred areas remain available for the timber industry and other uses

What might be some of the social impacts in Kendall if forest areas currently deferred become available for industry and other uses?

Positive social impacts	Negative social impacts
<ul style="list-style-type: none"> ▪ Increased employment ▪ Controlled burns and better forest management ▪ Young growth — improved environment ▪ Good for self esteem of youth, positive things needed for youth to look forward to and develop skills in ▪ State forest maintenance of roads for general access is valued e.g. pony trails ▪ Carbon credits ▪ Less pressure on areas available — beneficial effect on the town ▪ Current employees would sleep easier ▪ New people living here, more buildings, more shops ▪ Lots of endangered species found in logged areas ▪ More wood equals increased small industries e.g. woodcraft ▪ Increased tourism and related businesses 	<ul style="list-style-type: none"> ▪ Loss of areas that are/have been untouched

50% deferred areas are available for industry and 50% deferred areas are available for conservation and recreation

What might be some of the social impacts in Kendall if 50% of currently deferred is available for industry and 50% is available for conservation and recreation?

There was no community response to this scenario.

Case study area — Millfield

History of settlement

Millfield is located in the Hunter area of New South Wales, 13 kilometres west of Cessnock.

Settlement began at Millfield a few years after the main northern road to Cessnock, Maitland and Newcastle was completed in 1831.

The economy of the area was based on farming and coal mining. By the 1840s and 1850s the village had become the centre of a recognised wheat and maize district and a flour mill was erected in the town.

During the 1860s there was an influx into the area of poor people who acquired small farming properties.

After the opening of the Cessnock coal fields in 1891 the timber industry developed in Millfield as timber was used in the mines.

The first school in Millfield was an Anglican denominational school. In 1868 a State school began when the denominational school could not maintain enrolments. For the first 50 years of its existence Millfield Public was a one-teacher school. In 1928, it became a two-teacher school.

There have been several sawmills in Millfield. In 1926 the Craft family opened a sawmill and ice factory. Although the ice factory is now closed the mill is still operated by the same family. Another mill opened by the Sweetmans in 1928 is also still operating today. The third mill currently in operation, Harris' mill, was established in 1963.

Population

In 1996 the population of Millfield was 468, an increase of almost 20% from 1991 when the population was 391. Aboriginal people made up 3.2% of this population. The median age of the population was 29 and the dependency ratio was 35.24% (ABS 1996).

Millfield selected characteristics

	Male	Female	Total
Total population	239	229	468
Aged 15 years and over	168	171	339
Aboriginal	9	6	15
Torres Strait Islander	0	0	0
Both Aboriginal and Torres Strait Islander	3	3	6
Australian-born	212	199	411
Born overseas:			
Canada, Ireland, NZ, South Africa, UK and USA	13	11	24
Other country	5	5	10
Total	18	16	34
Speaks English only and aged five years and over	198	192	390
Speaks language other than English and aged five years and over	5	7	12
Australian citizen	220	204	424
Australian citizen aged 18 years and over	142	142	284
Unemployed	22	20	42
Employed	84	46	130
In the labour force	106	66	172
Not in the labour force	53	100	153
Unemployment rate	20.8	30.3	24.4
Enumerated in private dwellings	239	229	468
Enumerated in non-private dwellings	0	0	0
Persons enumerated same address five years ago	114	112	226
Persons enumerated different address five years ago	90	90	180
Overseas visitor	0	0	0

Source: ABS 1996 Census of Population and Housing

Major industries in the township of Millfield

Millfield has a small village with a shop, school, services club and a church. Manufacturing in the town centres on Millfield's three timber mills, which employ more than a third of people in the manufacturing category. The town also provides accommodation for people visiting the vineyards.

The five industries that employ the largest numbers of people in Millfield in 1996 were retail and wholesale trade (21.77%), manufacturing (17.74%), health and community services (9.68%), mining (8.87%) and accommodation, cafes and restaurants (8.06%) (ABS).

Between 1991 and 1996 there was a decline in employment in mining (12%), and increases in the combined categories of wholesale and retail trade (9%) and construction (2.75%) (ABS: 1996).

Industry by employment in the local government area

Major industries in Cessnock are retail and wholesale (18.69%), manufacturing (15.87%), mining (11.94%) and health and community services (4.65%) (ABS 1996).

One hundred and two people in Cessnock LGA worked in the timber industry in 1996, 30 in forestry and logging, 33 in sawmilling and timber dressing and 39 in other wood product manufacturing (ABS 1996).

Cessnock LGA is developing a major growth industry in tourism based on the wine industry in the Pokolbin area. There is a proliferation of restaurants, motels, cabins, guest houses, craft/art galleries and specialist tourist attractions. An estimated 314 000 people visited the LGA in 1996–97, 73 000 more than in 1994–95. Tourist expenditure has also risen during this period by \$13 million, with tourists spending an estimated \$58 million in 1996–97 (Tourism NSW).

Unemployment in the Cessnock LGA was much lower than in Millfield. In the LGA the combined unemployment rate was 13.1%. In Millfield the combined rate was 24.4%. The LGA unemployment is much higher than the State average of 8.8%; Millfield's unemployment rate almost trebles it (ABS 1996).

The following table compares industry by employment in Millfield and in the Cessnock LGA (ABS: 1996).

Industry	Total % Millfield	Total % Cessnock LGA
Agriculture, forestry, fishing	2.42	3.06
Mining	8.87	11.94
Manufacturing	17.74	15.87
Electricity, gas, water	0	1.01
Construction	5.65	5.55
Wholesale trade	2.42	4.84
Retail trade	19.35	13.85
Accommodation, cafes & restaurants	8.06	6.00
Transport & storage	5.65	3.37
Communication services	2.42	0.96
Finance & insurance	0	1.85
Property & business services	4.84	5.73
Government administration & defence	0	1.90
Education	2.42	4.65
Health & community services	9.68	10.19
Cultural & recreational services	2.42	2.23
Personal & other services	5.65	3.94
Not classifiable	2.42	1.45
Not stated	0	1.60

Income

In 1996 the median annual individual income range was \$8320 to \$10 400 and the median annual household income range was \$15 600 to \$26 000; 2.78% of individuals earned over \$50 000 per annum. The median annual individual income for New South Wales was \$15 500 and the household income was \$34 060 (ABS 1996).

Community infrastructure

Health

Millfield has no health services. Residents of Millfield usually access these services in Cessnock.

Education

Enrolments at Millfield Primary School remained stable relatively between 1993 (42) and 1998 (39), as did staffing numbers (approximately 2.5 teachers). The school receives funding under the Disadvantaged Schools Program (NSW Department of Education and Training).

Millfield does not have a preschool. The closest is at Bellbird, seven kilometres away.

Housing

Home ownership has declined by 19% in Millfield between 1991 (53.23%) and 1996 (43.14%). However, the number of dwellings being purchased increased by 55% since 1991 to 34.64% in 1996. The number of dwellings being rented also increased by 1% in this period, so that in 1996, 14.37% of dwellings were rented.

There were 36 unoccupied private dwellings in the town representing 19% of the total private dwellings.

Communications

Millfield has no local newspaper or newsletter. The *Cessnock Advertiser* covers news for outlying communities.

Community services

Millfield has very few community services located in the village. It does however, have a community hall and a sports field, park/playground and tennis courts (City of Cessnock, Community Profile, 1993–94).

Annual events

Millfield has no annual events.

Outcomes of Millfield community workshop

(Held: 31 August 1998)

Groups represented : tourism, Forest Protection Society, beekeeping, education, senior citizens, youth, religious groups, Chamber of Commerce, communications, timber industry, and Landcare.

Significant events

Year	Event
1980	Crawford's Mill closed
1980 on	Logging area has been taken up by national parks. Includes: Putty State Forest; Yango Crown Land, Mount Royal National Park. Resources continue to be depleted
Last 10 years	New settlers coming in
1990 on	Hari Krishnas settled in community just out of town
Early 1990s	Important fundraising for church and school, ~ \$2000 raised
Last 5 to 10 years	Rural subdivision and Jack Crawford's land sold. Used to have lots of dairy farms, 1 left
1993	Shop changed hands, Stace's arrived in town
1993	Formation of Millfield Tidy Towns (recently reactivated)
1993	School celebrated 125 anniversary
1993–94	Nursery developed
1994	Mail delivered
1994–95	Number of small businesses developed (six) - B&Bs & tourist operators
1995	Memorial established at the school (11.11.95) and club (1996). \$'s provided by community, community effort.
1997	Rising Sun Inn Museum opened
1997–98	Vineyard established in Mountview. Olive farm behind that. Winery established.
1998	New principal appointed to Millfield Central School (after 15 years)

How did the community manage these events?

Positive event — small business and tourism

- Growth of wine tasting in vineyards in area and lots of B&Bs. Flow-on effect to Millfield, people get lost and stop at the shop for directions.
- Only 10 minutes by scenic route to Mountview district — Farrells, Brokenwood etc, Bimbadeen National Park and Mount Bright, scenic drives. People started coming to Mount Cedar Creek, cabins, deer farm, Bellbird cottage, Hari Krishna farm, B&Bs
- A satellite industry has developed around the vineyards and accommodation in Millfield is a more reasonable cost than the vineyards. Tourism has noticeably increased. Even the Hari Krishna farm has brought business because they have lots of functions. The children attend the local school.
- Development generated from the outside, many people are refugees from Newcastle and Sydney who bring industries and money. Lots of seasonal fruit pickers, Sydney people investing in houses. Many homes are rented not owned. Housing prices are low.

Negative event — loss of resource for timber industry

- Loss access to the Watagins. Has not had an effect yet because Sweetmans Mill has access to private property out of the area. Without the right decision Sweetmans Mill won't last much longer, and other probably won't either.
- People are living under the threat of losing their jobs. Already one contractor has accepted exit package.
- It's a small town with a PO, bus, school, club, church and three mills. If there are no mills all these will disappear.

- We'll still have the cemetery. The future is very grim, there were originally seven mills in the area with no less than three running at any one time.
- The community recognise that the mill was important through the Tidy Towns program, and the graphics on the town sign which notes mills, bridges and shows forestry tools.
- In Morisset Forestry district national parks consisted of 43%: freehold 42%, Crown 5%, State forests 10%. Only 30% to 50% of that has been logged. It is important to get the resource back. With 30 employed in the bush and 20 in the mills there will be a flow-on effect.

Community feelings about Millfield

How do you feel about Millfield?

- There's no other place to go as good as here.
- I don't live here but I work here. The general feeling that you belong and make you feel welcome. There's a strong community feeling, it's a lovely place.
- I feel proud to live here because of the community spirit. The people here do lots of voluntary work e.g. church, school weather shed and club. Mills and people donated time and materials. The first church working bee there were 13 men and five trucks.
- As a relative newcomer I would class the remaining mills as living treasures and I feel we should hold on to them. Part of the strong spirit of the town from early on.
- When I moved here I was green and knew no-one. Just had to ask and people would help. It's more friendly than my home town.
- I've been here eight years and rented three years. I chose to live here because it's an area you can raise kids in and you don't have to worry about crime. Life in Millfield is a gift as a parent to my children because it has safety and security.
- I live out of the area but work in the forests, it's a scenic area.
- I've built a house here and now have a young family. You don't have to worry about the kids.
- Everyone watches out for others' kids. I have a job in the mill and want to live here.
- I like it here because of how quickly the trees grow. There used to be a lot of mines which used a thousand props a day. Now there's one mine left and they use concrete props.
- Where else is there to go? It's the best place on earth.
- I like Millfield — it's quiet but I'm still a city boy. There's no crime here at all.
- The air is clean, there's no pollution, the trees grow fast and it keeps me alive.
- I've got mixed feelings. I like the area and the country — the birds etc. The people will talk to you.
- It's much better than the city. I've mixed feelings because there's not as much involvement in the community as there used to be and I'm not sure how the battle for land and forests will go.
- I like it. I've lived here all my life but its changing and I don't know if it's for the better.

Visions for Millfield

What are some of the visions for the future of Millfield?

- People send children to the local school — not the one in Bellbird.
- Employment base maintained — town able to grow and have the economic base.
- Good shelter sheds; timber of course! We already have a good bus service for the school and community.
- A timber industry with a sustainable resource.
- Jobs stay here that *are* here.
- A basketball court.
- A real emphasis on heritage. See operating flour mill and a historic trail around Millfield and mills operating.
- Job base remains and there are employment opportunities for young people.
- Mills still here.
- No more national parks or wilderness areas declared.
- Everyone working.
- Proper sewerage facilities and a good road from Pelton Pinch to the mill.
- Millfield wins Cessnock Tidy Towns award.

Reaction to forest use options

The tables below detail the participants comments which have been charted to correspond with the way they were prioritised.

Deferred areas remain available for conservation and other uses

What might be some of the social impacts in Millfield if forest areas currently deferred become available for conservation and recreation uses?

Positive social impacts	Negative social impacts
<ul style="list-style-type: none">▪ Increased tourism, ecotourism generates employment	<ul style="list-style-type: none">▪ Fifty men would lose jobs including contractors — multiplier effect (Sweetman and Craft Mills)▪ Lose historical Millfield, generational ties▪ Increased tourism. Have direct impact on water quality through water catchment areas▪ Visual scenery polluted as a possible in blue green algae bloom through poor tourist management

Deferred areas remain available for the timber industry and other uses

What might be some of the social impacts in Millfield if forest areas currently deferred become available for industry and other uses?

Positive social impacts	Negative social impacts
<ul style="list-style-type: none">▪ Current employment in industry increased. More confidence, more employed to 'value add'▪ Current employment in timber industry maintained▪ Encourage cottage industries related to timber craft — timber supplied by mills	

Positive social impacts	Negative social impacts
<ul style="list-style-type: none"> ▪ Cleaner air from production forest, improved health ▪ Young people in Millfield have a proud heritage and sense of self esteem, links with the past, uniqueness ▪ People find alternatives e.g. cottage industries, vineyards etc 	<ul style="list-style-type: none"> ▪ Alternatives to timber for housing e.g. steel, bad for environment in Millfield and globally ▪ Trail bikes and 4WDs wreck waterways and roads. Impact on B & Bs

50% deferred areas are available for industry and 50% deferred areas are available for conservation and recreation

What might be some of the social impacts in Millfield if 50% of currently deferred is available for industry and 50% is available for conservation and recreation?

Positive social impacts	Negative social impacts
	<ul style="list-style-type: none"> ▪ Trail bikes and 4WDs wreck waterways and roads. Impact on B & Bs ▪ Timber industry will close in Millfield

Case study area — Stroud

History of settlement

Stroud is situated in the Karuah Valley in the Hunter region of New South Wales. The town is one of the rural centres of the Great Lakes Shire.

The Great Lakes District had two Aboriginal tribes — the Biripi who lived between Tuncurry, Taree and Gloucester and the Worimi whose land was located between Barrington Tops and Forster in the north and Maitland and the Hunter River in the south. The Worimi has a number of distinct groups, called Nurras, and it is likely that the Stroud area was mostly populated by the Buraigal group.

The first white people in the area were five white convicts who escaped from the Second Fleet and were looked after by the Aboriginal people in the Hawkes Nest district. Later, in the early 1800s, cedar cutters moved into the area but made no attempt at settlement. The arrival of the cedar getters caused a dispersal of the tribes, with the Biripi and Worimi camping on the same territory.

The first white settlements occurred when the Australian Agricultural Company was granted land from the northern shore of Port Stephens to the Manning River. The company commenced its agricultural activities in the 1820s with Stroud as a sheep and farm outpost. By 1832 it was a self contained village with storehouses and much of the company's convict labour located there.

Later, in the 1850s, Stroud was chosen as the headquarters for the company. From this time land was subdivided for private settlement. However, the town suffered a setback when the company moved its headquarters to Newcastle in 1856.

The withdrawal of the Australian Agricultural Company had a negative impact on the Aboriginal people. When the company withdrew, and free settlers came to the area, they lost land, sacred sites and hunting grounds as the settlers took up land grants. By 1840 the food sources diminished to such a degree that the Aboriginal people were starving. They began killing stock to supplement their food supply and the settlers retaliated by trying to drive them off the land. After much bloodshed, the Aboriginal people retreated to the rough north western reaches of the Manning River and the ranges behind the lakes (Great Lakes Community Profile — 1997, Website Any Point Australia - Stroud).

Population

In 1996 the population of Stroud was 598, an increase of 40 since 1991. Aboriginal and Torres Strait Islander people made up 2% of the total population. The median age of the population was 36 in 1996, and the dependency ratio in 1996 was 43.89% (ABS 1996).

Stroud selected characteristics

	Male	Female	Total
Total population	287	311	598
Aged 15 years and over	218	225	443
Aboriginal	3	3	6
Torres Strait Islander	3	3	6
Both Aboriginal and Torres Strait Islander	0	0	0
Australian-born	258	283	541
Born overseas:			
Canada, Ireland, NZ, South Africa, UK and USA	17	14	31
Other country	5	8	13
<i>Total</i>	22	22	44
Speaks English only and aged five years and over	258	272	530
Speaks language other than English and aged five years and over	0	3	3
Australian citizen	276	299	575
Australian citizen aged 18 years and over	200	207	407
Unemployed	23	7	30
Employed	116	70	186
In the labour force	139	77	216
Not in the labour force	77	143	220
Unemployment rate	16.5	9.1	13.9
Enumerated in private dwellings	278	300	578
Enumerated in non-private dwellings	9	11	20
Persons enumerated same address five years ago	162	160	322
Persons enumerated different address five years ago	94	117	211
Overseas visitor	0	0	0

Source: ABS 1996 Census of Population and Housing

Major industries in the township of Stroud

The industries that were the major employers in Stroud in 1996 were manufacturing (13.9%), agriculture, forestry and fishing (12.83 %), and retail and wholesale trade (11.77%).

Industry by employment in the local government area

The main industries in the Great Lakes area in 1996 were the retail sector (18.7%), accommodation, cafes and restaurants (9.5%), health and community services (8.7%),

agriculture, forestry and fishing (8.4%), manufacturing (7.7%), property and business services (6.6%) and education (6.2%) (ABS).

The growth of tourism has largely been responsible for the growth of the towns and villages and the growth of industries and services in the LGA (Great Lakes Community Profile 1997). In September 1997, 187 people were employed in tourist accommodation services in the Great Lakes LGA (Socio-Economic Profile of the North Coast of NSW, 1998).

In 1996–97 the estimated number of tourist visits to the Great Lakes LGA was 673 000, an increase of 63 000 from the period 1994–95. Tourist expenditure estimates during the same period also rose, from \$106 to \$124 million (Tourism NSW).

The timber industry is a major employer in Great Lakes LGA. A total of 276 people were employed in this industry in 1996, 51 in forestry and logging, 162 in sawmilling and timber dressing and 63 in other wood product manufacturing (ABS).

Unemployment is slightly higher for the township than the LGA. In the town, the unemployment rate was 13.9%, the LGA was 12.55 % (ABS 1996).

The following table compares industry by employment in Stroud and in the Great Lakes LGA (ABS 1996).

Industry	Total % Stroud	Total % Great Lakes LGA
Agriculture, forestry, fishing	12.83	8.39
Mining	3.21	1.31
Manufacturing	13.90	7.74
Electricity, gas, water	3.21	0.61
Construction	6.42	8.49
Wholesale trade	3.21	3.40
Retail trade	8.56	18.66
Accommodation, cafes & restaurants	4.81	9.52
Transport & storage	9.63	2.91
Communication services	0	1.22
Finance & insurance	6.42	2.53
Property & business services	6.42	6.58
Government administration & defence	3.74	4.26
Education	4.81	6.18
Health & community services	8.02	8.72
Cultural & recreational services	0	1.46
Personal & other services	3.21	4.36
Not classifiable	0	1.22
Not stated	1.60	2.44

Income

In 1996 the median annual individual income range was \$10 400 to \$15 600 and the median annual household income range was \$15 600 to \$26 000; 1.32% of individuals earned over \$50 000 per annum. The median annual individual income for New South Wales was \$15 500 and the household income was \$34 060 (ABS 1996).

Community infrastructure

Health

There are a variety of health services available in Stroud, mostly provided on an outreach basis from Forster–Tuncurry, Taree or Gloucester. The following services are located in Stroud: an ambulance station, community health centre, and a doctor's surgery.

Aged care services such as an assessment team, continence nurse, geriatric nurses, geriatrician, occupational therapist, respite care support worker, social worker, and speech pathologists are available on an outreach basis. Community Health Services include Aboriginal health worker, alcohol and other drugs worker, audiometrist, child and family worker, diabetes worker, dietician, early childhood nurse, falls injury prevention program, farm safe action group, generalist community nurses, child and adolescent mental health worker, mental health nurse, psycho-geriatric worker, occupational therapist, palliative care nurses, physiotherapist, pre-school screening, and speech pathologist (Great Lakes Community Profile, 1997).

Education

Stroud has a State primary school and a preschool.

The State primary school had an enrolment of 94 in 1998, an increase of five students since 1993, and a corresponding increase in staffing from 4.561 to 4.736 (NSW Department of Education and Training).

There has been a decrease in the number of children attending preschool over a five year period from 1991 (19) to 1996 (13) (ABS).

Housing

The numbers of dwellings being owned, purchased or rented between 1991 and 1996 has remained relatively stable in Stroud. Approximately 50% of dwellings are fully owned, 19% are being purchased and 18% are rented. There were 24 unoccupied private dwellings in Stroud in 1996, representing 9.68% of the total dwellings (ABS 1996).

Community services

Most community services in Great Lakes are located in Forster–Tuncurry where most of the population is concentrated. Other towns in the Great Lakes area have outreach services mainly from Forster–Tuncurry, Taree, Gloucester, Maitland, or Raymond Terrace, as well as local voluntary services.

Services for aged people and people with disabilities located in Stroud include a hostel, a meal service, senior day care and community transport. Outreach provides developmental disabilities service, early intervention, home help, home modification scheme, shopping service, and individual transport. Children's services include a Nursing Mother's Association counsellor and family support services (provided by outreach). For youth an Aboriginal youth worker, youth accommodation support worker and youth development worker services are outreached.

The voluntary services located in Stroud include a Chamber of Commerce, rural fire brigade, State Emergency Service/Volunteer Rescue Service, and a progress association. A range of recreation, leisure and sporting activities are also offered on a voluntary basis, such as cricket, football, golf, lawn bowls, a show committee, soccer, tennis, historical society, a senior citizen's association, Guides, and a play group. Venues for local activities include a swimming pool, a local hall, a children's playground. The town has a cemetery, library, police station and post office (Great Lakes Community Profile, 1997).

Annual events

Annual events in Stroud include the Stroud Rodeo and Camp draft, the Agricultural Show and the Stroud International Brick and Rolling Pin Throwing Contest. These events have good community support, drawing 3000 to 4000 people to the town per day.

Community perspectives in Stroud

There were no community workshops held in Stroud, but consultations with community leaders have provided a history of recent change. During the past 10 to 15 years there have been significant changes in the community:

There has been a significant decline in the timber industry. Three mills have closed leaving only two in the district. The current mills are both hardwood mills, one sourcing its timber from private property and the other from State forests. In the past, each time there was a government restriction on timber resources, the town responded by holding rallies and lobbying members of parliament. However, there is a general feeling that this has not produced any favourable responses.

There has been a change in the composition of members of the community over the past few years, with the town being regarded as a dormitory area for people who work in Raymond Terrace, Kooragang and Newcastle. These new people are buying houses in the town or small rural lots and although their major spending is in other areas they are still a good source of income for local businesses. These people are also getting involved in the local community.

Once the area was principally dairy farming, but with changes in technology in the dairy industry, there are very few of these farms left. Many primary producers, 38 to 40 in the district, are now producing chickens for meat for large companies such as Steggles and Inghams. This industry has been good for local business and created employment for people in the local community as well as for some displaced timber workers. Some of these are full-time positions, but much of it is casual.

The retail sector was in severe decline 10 years ago but has had a resurgence with the influx of new people to the area and with the introduction of chicken farming to the area. Unfortunately the industry is now flat. The perception is that this is part of the general trend for businesses in regional areas.

A recent boost to the local economy has been the opening of a coal mine at Stratford which employs people from the town. There is also a proposal before council to open a mine at Durally, 7 km from Stroud.

Case study area — Walcha

History of settlement

Walcha is located in the New England Region of New South Wales, on the Oxley Highway at the intersection of Thunderbolt's Way (Uralla to Gloucester) and the Oxley Highway (Bendemeer to Port Macquarie). It is the gateway to the Oxley Wild Rivers National Park, the Werrikimbe National Park and the Macleay Gorges Wilderness Area.

Walcha was the first area on the great Dividing Range and tablelands to be explored by Europeans. In 1818 the explorer John Oxley and his expedition camped beside the Aspley

River close to Walcha. Settlement by early stockmen followed as they drove their flocks of sheep north from the Hunter Valley in search of good pastoral land. In 1932, H.C. Semphill's sheep were moved from the famous Belltrees, Scone, to a place not far from where Oxley camped. This first station was called Walcha.

The town was gazetted in 1852 and the Municipality of Walcha was proclaimed in 1889.

The Walcha district today is a significant primary producing area. It is a large sheep and beef area and is renown as one of the best fine-wool growing areas in the world.

Population

In 1996, the population of Walcha was 1623, a decline of 9.13% from 1991 when the population was 1786. Aboriginal and/or Torres Strait Islander people comprised 6% of this population. The median age of the population in 1996 was 37 and the dependency ratio was 36.88% (ABS).

Walcha selected characteristics

	Male	Female	Total
Total population	805	818	1623
Aged 15 years and over	633	644	1277
Aboriginal	49	48	97
Torres Strait Islander	0	0	0
Both Aboriginal and Torres Strait Islander	0	0	0
Australian-born	750	764	1514
Born overseas:			
Canada, Ireland, NZ, South Africa, UK and USA	18	21	39
Other country	16	13	29
<i>Total</i>	<i>34</i>	<i>34</i>	<i>68</i>
Speaks English only and aged five years and over	719	735	1454
Speaks language other than English and aged five years and over	12	7	19
Australian citizen	782	790	1572
Australian citizen aged 18 years and over	568	581	1149
Unemployed	45	20	65
Employed	387	244	631
In the labour force	432	264	696
Not in the labour force	181	374	555
Unemployment rate	10.4	7.6	9.3
Enumerated in private dwellings	788	781	1569
Enumerated in non-private dwellings	17	37	54
Persons enumerated same address five years ago	438	420	858
Persons enumerated different address five years ago	288	322	610
Overseas visitor	5	0	5

Source: ABS 1996 Census of Population and Housing

Major industries in the township of Walcha

Walcha township is a service centre for a prosperous rural community, with the economy of Walcha primarily based around the agricultural activities of sheep and beef production and forestry. There is a relatively high number of forestry workers living in the town (Walcha Shire Council 1998).

Major industries in 1996 were primary industry (22.64%), retail and wholesale trade (16.67%), health and community services (9.28%), government administration and defence (7.55%) and accommodation, cafes and restaurants (6.6%) (ABS 1996).

The 1996 census records the timber industry employing 75 people, all in forestry and logging. These figures do not account for employment at the large timber mill in the town.

Tourism plays an increasing role in the economy of Walcha. In 1996–97 there were an estimated 231 000 visitors to the area compared to 208 000 in 1994–95. There was a corresponding increase in tourist expenditure during this period, with \$8 million being spent in 1996–97, an increase of \$2 million since 1994–95 (Tourism NSW).

Industry by employment in the local government area

In 1996 employment in primary industries in 1996 was the major employer the Walcha LGA, and was higher than Walcha township (48.55%). Other major industries in the LGA were wholesale and retail trade (10.88%), health and community services (6.53%) and education (5.19%).

In comparing employment in the LGA and the township, 22.76% more people were employed in agriculture in the LGA. The town had a greater proportion of people involved in retail and wholesale trades (7.67% difference), government administration (3.62% difference) and health and community services (2.75% difference) (ABS 1996).

Unemployment in the Walcha LGA in 1996 was slightly lower than in Walcha township. The unemployment rate was 8.9% in the LGA, and 9.3% in Walcha township. The figures for the LGA were similar to the State average of 8.8% (ABS: 1996).

The following table compares industry by employment in Walcha township and in the Walcha LGA (ABS 1996).

Industry	Total % Walcha	Total % Walcha LGA
Agriculture, forestry, fishing	22.64	48.77
Mining	0	0
Manufacturing	2.36	2.25
Electricity, gas, water	1.26	0.84
Construction	5.19	2.67
Wholesale trade	3.93	2.88
Retail trade	12.74	8.00
Accommodation, cafes & restaurants	6.60	3.44
Transport & storage	5.35	3.09
Communication services	1.89	1.05
Finance & insurance	1.57	0.98
Property & business services	5.5	3.37
Government administration & defence	7.55	3.93
Education	5.35	5.19
Health & community services	9.28	6.53
Cultural & recreational services	0.94	0.84
Personal & other services	3.14	2.32
Not classifiable	2.20	1.68
Not stated	2.52	2.18

Income

In 1996 the median annual individual income range was \$10 400 to \$15 600 and the median annual household income range was \$15 600 to \$26 000; 1.42% of individuals earned over \$50 000 per annum. The median annual individual income for New South Wales was \$15 500 and the household income was \$34 060 (ABS 1996).

Community infrastructure

Health

Government medical services in Walcha consist of the Walcha District Hospital and Community Health Service. The hospital has 30 beds, 20 of which are reserved for aged care. The hospital provides emergency care, a paediatric unit and a general ward.

The Community Health services are mostly outreached from Tamworth or Armidale. These services include physiotherapy, generalist community nursing, a day centre, early childhood services, preschool assessment, antenatal classes, counselling, hearing testing, a dietician, a diabetic management nurse, women's health, speech therapy, mental health, continence assistance, a legal service, dental clinic, program of aids for disabled people, an Aboriginal liaison officer, home modification and maintenance and an aerobics class (Walcha Community Health Service).

There are three general medical practitioners for the town and an ambulance station with two ambulance officers (Walcha Council, 1998).

Education

Walcha has three schools — Walcha Central school (K–12), St Patricks (K–6), and the Walcha Preschool kindergarten.

Walcha Central School had a significant decline in enrolments between 1993 and 1998. In 1998, 427 student were enrolled, a decrease of 17.4% since 1993. Teacher entitlements for the school also decreased by 6.5 to 30.38 teachers in 1998 (NSW Department of Education and Training).

There has been a steady decrease in the number of children enrolled at St Patricks over the past five years. In 1998, 44 children attended the school, a loss of ten in the past five years.

The Walcha Preschool is licensed to accommodate 20 children per day. Total enrolments are 80. These are rising with most places for 1999 already taken.

Training through adult community education is also available in Walcha.

Housing

The percentage of home ownership remained stable between 1991 and 1996 at approximately 48%, as has the number of dwellings being purchased (approximately 18%) The number of dwellings being rented has increased by 2.5% to 29.86 in 1996. There were 75 unoccupied private dwellings in the town representing 10.74% of the total private dwellings (ABS 1996).

Communications

A free weekly community newspaper, the *Aspley Advocate* is published by the Telecottage in Walcha. The Telecottage also provides access to and training in information technology.

Several areas for improvement to communications in the area have been identified. These are extending the mobile phone network, both analogue and digital; access to

telecommunications services; improvement to rural phone lines (internet, fax and slow repair and installation); and availability of business networks e.g. Intranet (Walcha 2020, Future Search Workshop Summary, 1998).

Community services

Walcha has a range of community services mostly provided on a volunteer basis by community residents. Youth services include Scouts, Guides and Brownies, a safety house scheme, a playgroup and many sports groups. The Local Aboriginal Lands Council, Amaroo, includes a cultural centre and museum.

Aged services include home and community care service and the Senior Citizen's Association. Women's groups include the Anglican Women's Guild, St Paul's Presbyterian Church Women's Association, the Catholic Women's League and the Country Women's Association. A recent addition to services for the aged is the Aspley Riverview Aged Persons' Hostel, officially opened in 1992. The community raised \$300 000 from local fund raising ventures for this facility. The hostel has 15 beds and offers respite care.

Emergency services include the Walcha Volunteer Fire Brigade and the Walcha State Emergency Service. Other groups which are active in the town include the Walcha District Historical Association, the Walcha Business Houses Association, the Walcha Telecottage, the Australia Day Committee, the Arts Council, the Walcha Support Group, and the Walcha Timber Expo Committee (Walcha Council 1998).

A community needs survey was conducted in 1998. In particular unemployment was of great concern to the community, as was the fear of the timber mill closing. Local interest has been shown in establishing an Aboriginal Culture Field Study Centre (Walcha 2020, 1998).

Annual events

Walcha's annual events include the Bushman's Carnival and Camp draft, the Australia Day Breakfast in the Park, the Walcha Races, the Walcha Show, and the Timber Expo (held biennially).

Outcomes of Walcha community workshop

(Held: 2 September 1998)

Groups represented : the timber industry, local government, Forest Protection Society, CMFEU, Landcare, communications, emergency services, environmental groups, education, tourism, community events, Chamber of Commerce, and farmers.

Significant events

Year	Event
1980s	Mills closed (Riamurrk and others)
1980s	General loss of spending power. Sheep prices down, loss of itinerant labour. Farmers running on a shoe string
1982, 1990-1998	Drought / loss of district agronomists
1986/87 & 1988	Council Annual Maintenance Road Grants reduced from \$1.4 million to \$880 000. Led to reduction in staff of 13 by natural attrition
1988	Court House hours cut — Clerk of Petty Sessions left town

Year	Event
1988	Reduction in rail services such as XPT
1989 +	Hospital Board removed. Led to a Regional Board. Loss of the affinity with the local community. Loss of acute care beds
1990–98	Some loss of Telstra jobs and decline in services e.g. there's no mobile digital coverage
	Loss of rateable land because of removal of 40 000 ha of leasehold land to national parks and State forests (through purchase of private land)
1990	21 bed hostel built by community which raised \$338 000. Also subsidised by the government. Total cost \$1.2 million
1991 +	Drop in rural commodity prices such as wool and meat
1992	First Telecottage in Australia
1994–95	Wilderness declarations. Three so far. 92 000 ha total to national parks. 83 000 ha total to State forests
1996	Post office franchised
1996	Commonwealth Bank closed, other bank services reduced
1996	Corporatisation of electricity plus loss of jobs in North Power (four jobs)
Jan 1996	Restructure of Aged Care Services
	Walcha survived all the above
January 1997 +	Forest resources cut by 57%, reduction in volume, SEPP 46, plus Native Vegetation Act, plus water restrictions
1997+	Reduction in jobs at the mill by 11 and seven contractors lost
1997	Management of State forests moved to Taree
1998	School numbers reduced executive staff and the loss of the deputy principal and less funding for the school bus service

How did the community manage these events?

Positive event — Riverview Aged Care Hostel

- Started with one person (Presbyterian Minister) as driving force behind development of Community Committee. A block of land was donated at the church. Public meeting of 30–40 people which identified community needs. Between May and June there was a huge community fund raising campaign.
- It now employs 16 people as full-time and part-time workers. A Land Trust was established with a Community Management Committee. Every organisation in town was involved in fund raising. The Council also contributed. Lots of volunteer effort was involved in building the Hostel.

Negative event — downgrading of services in Walcha

- Increased inconvenience and costs to people. Plenty of lobbying saved two out of three police stations in the Shire. Lobbying also got the school a multipurpose unit in 1988 and there was also lobbying about the loss of the deputy principal's position but it was unsuccessful.
- Banks closed but the credit union filled the void and installed an ATM. Two banks now close at lunch time.
- Loss of Telstra services. The time for phone repairs can be three weeks.

Community feelings about Walcha

How do you feel about living in Walcha?

- | |
|---|
| <ul style="list-style-type: none"> Fantastic! I made it my home. |
|---|

- I'm used to the town and know the area.
- I love the place but I'm worried about the mill.
- I'm lucky to live in a small community. The range of services and businesses revolves around the mill.
- My family has grown up here. I'm committed here, but worry about reductions to services.
- I'm optimistic. It can be claustrophobic but supportive. For example, fund raising and lobbying letters e.g. 150 letters were written re declaration of wilderness areas.
- I'm proud of what Walcha does for itself. The town raises thousands of dollars for charities.
- I came as a temporary, and never regretted staying. Footy competes with other towns. There's lots of local support for organisations.
- I was born here and been offered tremendous opportunities. You have to be creative to build opportunities.
- Positive — visitors say it's friendly. It pools together for the show and rodeo. The new streetscape is positive.
- High resource value in beef and wool. There's a good future, if allowed, in agriculture and forestry.
- Wonderful town, been here all my life. Good support for community action e.g. public meeting regarding the wilderness declarations attracted 1200.
- Good for family and business — it's a safe town for kids. Business depends on local loyalty.
- Strong independent town, not a transient population. It depends on locals for its income, the community sticks together no matter what. Will continue to be good if there's no government intervention.
- I moved here for a safer situation. We work at the mill and I'm worried about its future.
- I love living here (three years). It's friendly, self sufficient and has enough services to survive comfortably. I feel I can make a difference.

Visions for Walcha

What are some of your visions for the future of Walcha?

- Tourism potential.
- Growth in tourism to benefit business.
- Maintain services for excellent future.
- If commodities stable, there will be work in rural services. It has huge potential.
- Maintain positive features of town such as safety and services.
- Local school has a great record. This has a lot to do with the community input. I hope to continue this.
- Maintain what services we have.
- New industry such as pine plantations, and increased commodity prices.
- Good agricultural seasons, stable currency, no more government intervention, then we'd have a great future.
- Develop individual identity of town — to have a special atmosphere. Improved national park facilities and open air gallery for tourism.
- The mill to expand and export, vertically integrate, increase production volumes, and use resources in a different way.
- Maintain, strengthen hardwood. Jobs for young people to stop drift away. Maintain social and environmental advantage. Mill able to operate sustainably with softwood processing and development of farm forestry, softwood plantations as carbon credits. Extension of wool and fibre testing facility. Proud in the future.
- As long as the mill stays it will be pretty good.
- Multi-pronged future — with the past behind us. Politicians get the message from rural Australia — don't take any more away e.g. through regulations and wilderness areas. Walcha promoted as safe for kids. We've got a good future — leave us alone.
- At school level — to consolidate and sell the education product locally. Bus takes 40 to 45 local children to Armidale whereas they could be educated here. The streetscape should continue to

promote the town identity and tourism. This community works, so people stay.

- Computers and communication — we can attract new businesses with this technology. You don't have live in the city any more e.g. teleconferencing.
- Businesses in town mostly sell staples, some shops are closing. Tourism is picking up — there is a vision to increase tourism and maintain and increase industries to provide jobs.

Reaction to forest use options

The tables below detail the participants' comments, which have been charted to correspond with the way they were prioritised.

Deferred areas remain available for conservation and other uses

What might be some of the social impacts in Walcha if forest areas currently deferred become available for conservation and recreation uses?

Positive social impacts	Negative social impacts
<ul style="list-style-type: none"> ▪ None ▪ Zero impact socially, no increase in tourism 	<ul style="list-style-type: none"> ▪ Mill closed ▪ Closing the social fabric and independence and control over future ▪ Community fear of fire disaster ▪ Closure of fire trails and access roads affect tourist operators ▪ Contractors shut down ▪ Concern re level of forest management re native flora, fauna, feral animals ▪ Alienation of timber workforce — carrying the environmental burden ▪ Less 'generated' dollars, more dependence on government ▪ Community more reliant on social security ▪ Low morale of unemployed in community

Deferred areas remain available for the timber industry and other uses

What might be some of the social impacts in Walcha if forest areas currently deferred become available for industry and other uses?

Positive social impacts	Negative social impacts
<ul style="list-style-type: none"> ▪ Mill remains viable, jobs stay. May attract add-ons. May also attract softwood venture and farm forestry, money from 1960s plantation ▪ Maintenance of businesses ▪ Population stable so council is able to maintain services ▪ Robust, maintained recreational areas in State forest. Promotion for tourism ▪ Contracting business viable ▪ School increase. Needs numbers ▪ Increase in tourism as flow-on to positive morale 	

-
- Huge psychological boost. Turnaround in community morale would be positive
 - Community living in harmony with the environment
 - Baby boomers will have a job
 - Community pride in environmentally stable timber harvesting
-

50% deferred areas are available for industry and 50% deferred areas are available for conservation and recreation

What might be some of the social impacts in Walcha if 50% of currently deferred is available for industry and 50% is available for conservation and recreation?

Positive social impacts	Negative social impacts
	<ul style="list-style-type: none"> ▪ Mill will close down (as it is now) ▪ Contracting businesses will close ▪ School — decrease in teachers and contracting curriculum ▪ Population decline: Council's rate funds will decline if population-based ▪ Decrease in business houses and further unemployment
▪ None	

Case study area — Wauchope

History of settlement

Wauchope is a small township on the Hastings River, 420 kilometres north of Sydney. It is located within Hastings Shire on the Mid North Coast of New South Wales, and acts as the regional centre for the inland area of the shire, particularly for the rural communities and the associated agricultural businesses.

The area was initially inhabited by the Gadang people before European settlement. By the 1840s timber getters had discovered the thick blackbutt forest along the Hastings River and commenced clearing the area along the river.

The town was named after a pioneer of the region, Captain Robert Andrew Waugh. In 1841 he took up a land grant on the present day site of Wauchope and a village was established in the 1880s. The building of Bain's Bridge across the Hastings River in 1906 and extension of the railway in 1915 to Wauchope were further impetuses to the town's development.

By the early 1900s the dairy and beef industries, as well as the Upper Hastings cooperative and annual agricultural show, had been established. There were up to 40 small mills in the area and the town had its own newspaper and police station.

In the 1920s soldier settlement blocks were released, the first banks were established and the town had a visiting doctor. The 1930s saw the first permanent doctor in the town, a facility for the agricultural show was built and the CWA was established.

After World War Two, there was further soldier settlement and at the same time a government directive to harvest rainforest softwoods. These resulted in a significant growth in the timber and related industries as well as the town in general. The growth was followed by a construction boom. The first public hospital and voluntary ambulance service were established and electricity arrived.

By the end of the 1950s there were 52 timber mills. However, during the 1970s the timber industry began to experience recession. In 1981 the cutting of rainforest timber was banned and it is estimated that a loss of 600 jobs resulted from this decision. This affected the whole town's economy and the town suffered a further blow with the amalgamation of its council with Port Macquarie and the resulting shift of council activities.

Throughout the 1980s and 1990s growth in Port Macquarie has been at the expense of Wauchope, with many businesses leaving. The timber industry has also continued to decline during this period, with the plywood mill closing in 1993 and the last sawmill in the town closing in 1996. The town has also lost jobs as a result of regionalisation, rationalisation and downsizing of public authorities (Manidis Roberts 1996; and Website, Any Point Australia — Wauchope).

Population

In 1996 the population of Wauchope was 4693, an increase of 1.65% since 1991; 3.5% of the population identified as Aboriginal and/or Torres Strait Islander. The median age of the population in was 37 years and the dependency ratio in 1996 was 41.95% (ABS 1996).

Wauchope selected characteristics

	Male	Female	Total
Total population	2229	2464	4693
Aged 15 years and over	1687	1915	3602
Aboriginal	77	82	159
Torres Strait Islander	0	3	3
Both Aboriginal and Torres Strait Islander	0	0	0
Australian-born	2046	2244	4290
Born overseas:			
Canada, Ireland, NZ, South Africa, UK and USA	69	92	161
Other country	49	45	94
<i>Total</i>	<i>118</i>	<i>137</i>	<i>255</i>
Speaks English only and aged five years and over	2012	2197	4209
Speaks language other than English and aged five years and over	24	32	56
Australian citizen	2135	2343	4478
Australian citizen aged 18 years and over	1509	1721	3230
Unemployed	181	114	295
Employed	848	635	1483
In the labour force	1029	749	1778
Not in the labour force	630	1134	1764
Unemployment rate	17.6	15.2	16.6
Enumerated in private dwellings	2162	2389	4551
Enumerated in non-private dwellings	67	75	142
Persons enumerated same address five years ago	1172	1285	2457
Persons enumerated different address five years ago	847	929	1776
Overseas visitor	0	3	3

Source: ABS 1996 Census of Population and Housing

Major industries in the township of Wauchope

Wauchope is the regional service centre for the rural communities in the Hastings Shire. The major industries are wholesale and retail trade (26.3%), manufacturing (11.5%) and health and community services (11%).

In 1996 a total of 69 residents of Wauchope were employed in the timber industry, compared to 97 in 1991. The decline in employment in this industry has been in sawmilling and timber dressing, with a loss of half the jobs (24). Employment numbers in forestry and logging and wood product manufacturing have remained stable between 1991 and 1996.

There was a decline in the numbers of people employed in the construction between 1991(112) and 1996 (87), a drop of almost 30% (ABS).

Industry by employment in the local government area

The population spread, the distances involved and poor public transport, have all resulted in the Hastings being divided into a number of distinct communities rather than a cohesive group. This is evidenced by the different economic bases for the townships. For example, in the Port Macquarie and Camden Haven areas, the main sources of income are the twin industries of tourism and retiree-ism, whereas the other communities between the coast and the mountains derive their income from agriculture, dairying, forestry and beef (Hastings Community Profile, 1998).

Major industries in the LGA include retail (23.23), health and community services (12.12%), construction (8.27%), accommodation, cafes and restaurants (7.81%), property and business services (7.76%) and education (7.46%).

Three hundred and twenty nine people in Hastings worked in the timber industry in 1996, 79 in forestry and logging, 150 in sawmilling and timber dressing and 100 in other wood product manufacturing (ABS).

Tourism is increasingly important to the Hastings economy, with an estimated 834 000 people visiting the LGA in 1996–97, 48 000 more than in 1994–95 when 786 000 visited. Tourist expenditure also rose during this period by \$21 million, with tourists spending an estimated \$199 million in 1996–97 (Tourism NSW).

Wauchope had a higher percentage of people employed in manufacturing (11.5%) than the LGA (7.9%).

Unemployment in the Hastings LGA was higher than in Wauchope. In the LGA, the unemployment rate was 16.1%; in Wauchope it was 16.6%. The figures for the LGA are double the State average (ABS 1996).

The following table compares industry by employment in Wauchope and in the Hastings LGA (ABS 1996).

Industry	Total % Wauchope	Total % Hastings LGA
Agriculture, forestry, fishing	3.72	5.30
Mining	0.88	0.22
Manufacturing	11.49	7.49
Electricity, gas, water	1.69	1.05
Construction	5.88	8.27
Wholesale trade	6.56	4.92
Retail trade	19.74	18.31
Accommodation, cafes & restaurants	5.14	7.81
Transport & storage	4.80	2.83
Communication services	1.49	1.50
Finance & insurance	3.18	2.78
Property & business services	5.61	7.76
Government administration & defence	4.06	3.71
Education	6.36	7.46
Health & community services	11.02	12.12
Cultural & recreational services	3.04	2.15
Personal & other services	2.97	3.82
Not classifiable	1.15	0.76
Not stated	1.22	1.75

Income

In 1996 the median annual individual income range was \$10 400 to \$15 600 and the median annual household income range was \$15 600 to \$26 000; 1% of individuals earned over \$50 000 per annum. The median annual individual income for New South Wales was \$15 500 and the household income was \$34 060 (ABS 1996).

Community infrastructure

Health

Health services in Wauchope are administered by the Mid North Coast Area Health Service which is located in Port Macquarie. The town has a public hospital run by a private operator. It has 32 beds and no emergency services. There were several attempts to close the hospital in the early 1980s but the town is determined the hospital will not close.

A full range of hospital services are available in Port Macquarie, 21 kilometres away.

A community health service is located in the town providing adult day care, aged care, antenatal classes, Aboriginal hospital liaison, child adolescent and family counselling services, occupational therapy, palliative care, drug and alcohol counselling, early childhood nursing, respite care, social workers, women's health, and other services. Some of these are outreach services from Port Macquarie.

The town has an ambulance station with two ambulances, three general medical practitioners and one dental practice.

Birpai Local Aboriginal Land Council is looking to establish an Aboriginal health service in the area (Hastings Community Services Directory, Hastings Community Profile, 1998).

Education

Wauchope has a Catholic primary school, a State primary and high school and two preschools. It also has a TAFE college and an Adult Education Centre.

The State primary school had an enrolment of 695 in 1998, an increase of 44 students since 1993, and a corresponding increase in staffing from 27.7 to 31.6. The high school had a slight decline in enrolments during the same period, from 890 in 1993 to 876 in 1998 (NSW Department of Education and Training).

There has been a decrease in children attending preschool over the five year period from 1991 (83) to 1996 (75). Attendance at the Catholic school was 92 in 1996 (ABS).

Housing

Home ownership in Wauchope has decreased by 7% between 1991 and 1996 to 43.66%. Dwellings being purchased have also slightly decreased during the same period from 21.74% to 19.5%, while the numbers renting have increased from 23.16% to 27.44% (ABS).

Hastings Shire Council has identified a lack of housing in the area, especially for Aboriginal people. Public housing in the area is minimal, with long waiting lists for current stock and an estimated waiting period of up to seven and a half years (Dept Housing 1997). There are 101 unoccupied private dwellings in the town representing 5.4% of the total private dwellings (ABS).

Communications

Wauchope is served by the *Hastings Gazette* and has a community radio station. Other communications services including television, commercial radio and regional newspapers have offices in Port Macquarie.

Community services

The range of community services offered in Wauchope includes specific services for aged, children and families, and young people. There are, however, no specifically targeted services for Aboriginal people, though the council has established an Aboriginal consultative committee that has an advisory function.

Services for aged people include a nursing home, three hostels and a Meals on Wheels service. Council provides a community worker for aged people and the Hastings District Respite/Dementia Care service has an office in Wauchope. Other services for this group include a senior citizens centre, and neighbourhood aid program.

Youth services include a hostel and a housing service run by council (and located in Port Macquarie), and Scouts, Guides and a youth group located in Wauchope.

Children's services include a privately run preschool that offers some long day care places.

Other community services include a swimming pool, library, neighbourhood centre, post office, five banks, nine clubs, 12 sports clubs, seven churches, a fire brigade and State Emergency Service (Hastings Community Services Directory, 1998).

The town has a thriving voluntary sector with numerous social events organised by clubs and the Chamber of Commerce. The community noticeboard is well used and the local newspaper assists in promoting community activities (Manidis Roberts, June 1996).

Annual events

Annual events in Wauchope include the agricultural show, Lasiandra Festival and Rusty Iron Rally, Colonial Week, Hastings Valley Expo, and the Apex Christmas Carnival. There is a good deal of community support for these events (Manidis Roberts, June 1996).

Community perspectives in Wauchope

The Social Assessment Unit did not conduct a community workshop in Wauchope but has drawn on the results of a social impact assessment conducted by Manidis Roberts Consultants in 1996. Broadly speaking, the findings from this study were as follows:

- The timber industry began to decline from the 1970s with a net loss of 600 jobs. One of the contributing factors was the 1982 rainforest decision. The loss of timber jobs affected the town's whole economy. The community responded with initial protests following a loss of timber resources, but there was no real collective response. In recent years the plywood mill closed, and the last remaining mill closed in 1996.
- A tourist attraction known as Timbertown was developed in the 1970s to compensate for the loss of jobs in the timber industry. In 1983 Timbertown closed, but it was reopened again in 1985 following strong community investment and redevelopment.
- The local council amalgamated with Port Macquarie in 1981. This resulted in a shift of civic activities away from the town, and a relocation of many businesses in the town to Port Macquarie. Community perceptions were that initiatives undertaken by council were not being targeted at Wauchope but at Port Macquarie.
- The study found that although the community responded well to immediate local crises, it had difficulty responding collectively to trends and government decisions not initiated by the community (Manidis Roberts Consultants, Preliminary Forestry Social Impact Assessment, 1996.)

Consultations/interview with community leaders by the social assessment during 1998 have provided further information on recent changes:

- Timbertown closed again in 1998 because it was proving financially unviable.
- There is a perception that the proposed deregulation of the dairy industry would mean an 'end' to Wauchope.
- The lack of an industrial area in the town was making it difficult to attract business and industries to the town. In addition, competition with other small rural communities undergoing change would make it even more difficult to attract other industries.

Occupational communities in the Lower North East Region

The survey group

Of the 66 mills surveyed, 381 workers responded. Of these 64.6% were employed in hardwood mills that received quota from public forests, 22% in hardwood processing plants, 0.8% in operations that utilised hardwood salvage, and 4.5% in mills that drew resources from private property.

Mill workers

Hardwood mills

Two hundred and forty-six workers employed in hardwood mills responded to surveys. Ninety five per cent of these were male and aged between 17 and 70 years. There was a fairly evenly distribution across the range of ages with an mean of 34 years. Four and a half per cent of respondents identified as Aboriginal or Torres Strait Islanders.

The following table locates workers who work in hardwood mills which obtain quota from public forests within communities. Most live in three communities — Kempsey, Walcha and Bulahdelah.

Analysis of hardwood residence by township

Township of residence	Respondents %
Kempsey	17.5
Walcha	17.1
Bulahdelah	13.8
Bellingen	4.5
Bowraville	3.3
Nambucca Heads	3.3
Stroud	2.8
Macksville	2.4
Coffs Harbour	2.4
Taree	2.4
Gloucester	2.0
Wauchope	2.0
Wingham	2.0
Thora	1.6
Markwell	3.2
South West Rocks	1.6
Coolongolook	1.2
Frederickton	1.2
Dungog	0.8
Bundabah	0.8
Karuah	0.8
Muswellbrook	0.8
Armidale	0.8
Uralla	0.8
Tomago	0.8
Unknown	1.2
Other	8.4
Total	99.5

On average mill workers have lived in their current domicile for almost nineteen years. 43.5% have dependent children, with 30.5% of these having between one and four children who attend local schools. Almost 49% of mill workers either own their own house or are paying off a mortgage.

Mill workers have a strong association with the timber industry. They have worked a mean of seven and a half years in their current job, and more than 50% have worked in the timber industry for ten years or longer. More than a quarter of the workers (26.4%) have moved from one town to another to keep employed in the timber industry; 11.4% have moved once, 6.9% have moved twice, 3.3% have moved three times. The remainder have had to move up to eight times to keep in employment.

Annual incomes are low with only 42.7% of workers earning more than \$25 000 before tax. When household incomes are taken into account, the income for 52% is over \$25 000. This increase may be attributed to spouse/partner's employment status; 28% are in full-time, part-time or casual paid employment.

Hardwood processing

Of the 84 workers surveyed who work in hardwood processing operations, 96% were male. They are aged between 18 and 63 years with an even distribution across all age groups; 2.4% of respondents identified as Aboriginal or Torres Strait Islanders.

Most have low levels of formal education with 47.6% having only completed year 10. However, 25% have obtained a TAFE certificate.

The following table identifies the communities in which the workers in hardwood processing mills live.

Analysis of residence – hardwood processing

Township of residence	Respondents %
Raymond Terrace	22.6
Port Macquarie	10.7
Wauchope	8.3
Herons Creek	7.1
Laurieton	7.1
Kendall	6.0
Beechwood	3.6
Lemon Tree Passage	3.6
Lake Cathie	2.4
Taree	2.4
Cessnock	2.4
Karuah	2.4
Beresfield	2.4
Newcastle	2.4
Other	16.80
Total	100

Sixty-two per cent of people employed in hardwood processing operations have lived in their current domicile for more than ten years with the majority (57.1%) either owning their home or paying off a mortgage. Forty-three per cent of workers have between one and four children

who go to local schools. Seventy per cent have family who live in the area while 35% also have extensive extended families living in the area.

Worker association with the timber industry is strong, although 70% of workers have been employed in another industry at some time. Sixty-nine per cent have been employed in the timber industry more than five years, and 50% for ten years. Fourteen per cent have had to move up to five times to keep employed in the timber industry.

Employment in hardwood processing operations appears to be relatively stable. More than 57% of workers have been employed in their current job for five years or longer.

The annual income for workers in hardwood processing operations is higher than for workers in hardwood mills. Almost 54% earn between \$25 001 and \$40 000 per annum while another 17% earn between \$40 001 and \$60 000. When combined household incomes are taken into account, disposable incomes of more than \$40 000 increase to 37%. This increase is attributable to partner/spouse employment. Thirty three per cent of workers' spouses/partners are in full-time, part-time or casual paid employment.

Hardwood salvage (principally dependent on State forest resource)

Only three employees who responded to surveys worked in sawmills solely reliant on hardwood resource. To maintain confidentiality, survey data will not be provided for these workers. However, they will be taken into account in any impact assessment.

Private property

Seventeen of the 381 workers who responded to surveys work in mills that access private property. All were male. Their ages ranged from 18 years and 69 years with a mean of thirty-seven years. Twelve per cent identified as Aboriginal or Torres Strait Islander.

Sixty-five per cent of workers have been in their current job for 13 years or more. On average, these workers have been employed in the timber industry for 18 years.

Most respondents live in Gloucester (41%), Cessnock (24%), Stroud (12%), Millfield (12%), and Quorobolong (6%). The remainder did not identify their place of residence.

Respondents indicated a strong attachment to their communities. On average they have lived in the current residence for 25 years. Fifty-nine per cent own their own house or are paying off a mortgage. Eighty-eight per cent have families living in the local area. Forty-seven per cent have dependent children. Twenty-three per cent of these indicated that they have one or two children who attend local schools. On average they are involved in two community groups or organisations.

Most respondents (47.1%) earn between \$12 000 and \$25 000 per annum, although 23.5% earn between \$25 001 and \$40 000. Only 17% earn over \$40 000. However, combined household incomes demonstrate that spouses or partners contribute to overall incomes. When this is taken into account 39% of households move into an income bracket of over \$40 000, with 18% of these being over \$80 000.

Most mill workers on private property have low formal education qualifications. Only 17% indicated that they have completed year 12 or a TAFE certificate.

Contractors/haulers

Contractors

Fifteen owners (28%) of the fifty-eight contracting businesses sent surveys responded. These businesses employ between one and thirteen persons.

The respondents were male with an mean age of 39 years. No contractor identified as being Aboriginal or Torres Strait Islander.

Contractor attachment to the timber industry is strong with over 90% having worked in the timber industry for more than 10 years. Thirty-three per cent of respondents have moved township either once or twice to keep employment in the timber industry. Forty-six per cent also have other family members employed in the timber industry.

Over 73% have worked as a contractor for more than 10 years, and 33% for twenty or more years; 13.3% indicated that they worked away from home for significant periods.

Almost half (46.7%) the contractors have invested more than \$500 000 in their business; another 21% have invested between \$1 million and \$3 million. Eighty per cent of these businesses owe less than \$250 000. The gross income for 60% of respondents during the last financial year was less than \$500 000, although 33.4% earned more than \$1 million; 86.7% spent less than \$250 000 in fixed assets over the last financial year.

The respondents reside in communities throughout the region, with the highest distribution in Macksville (20.0%) and Walcha (13.3%). The following table identifies the communities respondents live in.

Analysis of residence — contractors

Township of residence	Respondents %
Macksville	20.0
Walcha	13.3
Karuah	6.7
Wauchope	6.7
Wingham	6.7
Port Macquarie	6.7
Dungog	6.7
Gosford	6.7
Dorrigo	6.7
Booral	6.7
Nabiac	6.7
Taree	6.7
Total	100.0

Contractors indicate a strong attachment to their communities. On average they have lived in the current residence for thirty years. Forty per cent own their home outright with a further 20% paying off a mortgage. Eighty per cent noted that they have up to twenty-five relatives living in close proximity, most of whom have lived in the local area for between twenty-five and seventy-five years. Sixty-seven per cent are involved in one to ten community groups or organisations.

Over 40% of contractors indicated that they have dependent children. Thirty-three per cent have between one and three children who attend local schools. This averages to 1.6 children of which 0.6 attend local schools.

The largest proportion of contractors (26.7%) have a combined household income between \$25 001 and \$40 000 per annum, 20% have a combined household income of \$ 25 000 or less, and 23% exceed \$40 000 per annum. A further 20% did not indicate what their combined incomes were. Partners/spouses contributed significantly to household incomes; 80% are in paid employment, 66.7% are in full-time work.

Contractor employees (bush crews)

Sixteen bush crew workers responded to surveys. The survey group was male with ages ranging from 22 to 56 years. The mean age for these workers is 32.7. Six per cent identified as Aboriginal or Torres Strait Islander.

Place of residence of the survey sample was Wauchope (37.5%), Dungog (31.3%), Kempsey (6.6%), Wootton, (6.6%) and Gosford (6.6%). On average they have lived in these residences for 17.87 years, although 37.5% have had to move to another town at least once to remain employed in the timber industry. Most have never worked in any other industry. Most (62.5%) have other members of their family employed in the timber industry in the Lower North East study region.

Fifty per cent of bush crew workers either own their own house or are paying it off. Combined household incomes for 37.5% is between \$25 001 and \$40 000, with a further 31% earning more than \$40 000. Spouses/partners contribute significantly. Almost 38% are in either full-time or part-time casual employment. On average they have one child who attends local schools.

Haulers

Fifteen haulers responded to surveys. The following table identifies where those businesses are located.

Analysis of business location — haulers

Business location	Respondents %
Walcha	33.3
Wingham	26.7
Markwell	13.3
Karuah	13.3
Stroud	6.7
Port Macquarie	6.7
Total	100.0

On average haulers have worked in their current job for 7.7 years, with the maximum length of time being 20 years. Over 60% have worked in the timber industry for more than ten years. In addition, 53% have other family members employed in the timber industry in the Lower North East CRA region. However, 73% have also worked in another industry at some time.

Ninety-three per cent of the sample surveyed are male. Their ages range between 27 and 48 years, with a mean of 37. No-one identified as being Aboriginal or Torres Strait Islander.

Haulers do not necessarily live in the same location as their business, although there is a high correlation between the two. The following table demonstrates those comparisons.

Comparison between residence and business location — haulers

Township of residence	Respondents %	Business location	Respondents %
Walcha	33.3	Walcha	33.3
Wingham	26.7	Wingham	26.7
Bulahdelah	13.3	Markwell	13.3
Stroud	6.7	Karuah	13.3
Karuah	6.7	Stroud	6.7
Macksville	6.7		
Port Macquarie	6.7	Port Macquarie	6.7
Total	100.0	Total	100.0

On average haulers have lived in their current place of residence for 16.8 years. Sixty per cent either own their own house outright or are paying off a mortgage.

Combined household annual incomes for the largest proportion of haulers (46.7%) is between \$25 001 and \$40 000, with a further 13.3% having a combined income between \$40 000 and \$60 000. Spouse/partners contribute significantly to this. Forty-three per cent are in full-time, part-time or casual paid employment.

Almost 67% of respondents have dependent children.

Other forest users

Beekeepers

Fifty-eight surveys were mailed to beekeepers. Fifteen businesses responded.

Respondents were male with an even age distribution from 32 years to 68 years, the mean being 46.6 years. No beekeepers identified as being Aboriginal or Torres Strait Islander.

Beekeepers who use the forests in the LNE region are widely scattered throughout New South Wales. The following table demonstrates where the respondents live.

Township of residence	Respondents %
Taree	13.3
Walcha	6.7
Bulahdelah	6.7
Kempsey	6.7
Wauchope	6.7
Port Macquarie	6.7
Wootton	6.7
Tamworth	6.7
Sydney	6.7
Comboyne	6.7
Mittagong	6.7
Gunnedah	6.7
Carey Bay	6.7
Warrell Creek	6.7
Total	100.0

Those who responded employ between none and five full-time employees, and between none and four part-time employees. There is an mean of one person full-time and one person part-time. Family members filled most of these positions. Seventy-three per cent of respondents employ family members full-time, and 40% employ family members part-time.

Beekeepers indicated they spend on average around 64% of their time in beekeeping activities. Forty per cent spend 100% of their time in this activity. On average 67% of the enterprise was dependent on State forests, 6% on private native forest, 15% on private land, and 7% on unforested land.

Ninety-three per cent of beekeepers own their house or a paying off a mortgage. Combined household incomes range from less than \$12 000 per annum to \$80 000 per annum with the highest percentages being \$12 000 to \$25 000 (27%) and \$25 001 to \$40 000 (27%). On average they have lived in their current residence for twenty-six years; 33.3% have dependent children, or a mean of one.

Occupational leases

One hundred and ninety-eight surveys were mailed to those with grazing leases in State forests. Eleven people throughout the region responded. Of these 82% were male, and 18% female. No one identified as Aboriginal or Torres Strait Islander. The age range was 29 years to 87 years, a mean of 42 years.

Respondents live in Kempsey (9.1), Cessnock (9.1), Wauchope (9.1), Ourimbah (9.1%), Cooranbong (9.1%). Over 54% did not specify their place of residence.

Respondents indicated they spend between half and all of their work time using forests for grazing activities. Eighteen per cent spend all their time in this activity. Eighty one per cent indicated that their enterprise relied on State forests to some degree. For 27% of respondents, this reliance was between 50% and 100%.

More than 36% of respondents employ one or two people full-time, 27% employ one to three people part-time, and 18% employ one person on a casual basis.

Combined household incomes for the greatest proportion of respondents (27%) is between \$25 001 and \$40 000, with a further 27% having a combined income in excess of \$40 000. Spouses/partners are contributors to household incomes, with 46% in paid employment.

All respondents either own their own house or are paying off a mortgage. Thirty-six per cent have between one and three children who attend local schools. Fifty per cent have family living in the area.

Tourism

Ninety surveys were mailed to tourist business. Sixteen businesses responded. Sixty-nine per cent of respondents were male, 31% were female. The age range was from 35 years to 65 years with an mean of 41 years. No-one identified as Aboriginal or Torres Strait Islander.

The following table identifies the type of business and the percentage of respondents for these activities.

Type of activity	Respondents %
Hotels, motels, lodges, guest houses, farmstays or bed and breakfasts	75.0
Holiday flats, units or houses	18.8
Outdoor tours	12.5
Caravan parks	6.3
Tourist attractions	6.3
Shops and galleries	6.3
Other (undisclosed)	6.3
Total	100.0

On average these businesses employ two people full-time, one person part-time, and two people on a casual basis. However, there were some major variations in employment levels. Some businesses indicated that they managed and ran their business on their own or with minimal help, while others employed up to eight people full-time and 15 people part-time.

The combined household annual income for 50% of respondents was more than \$40 000, with 31% of these having a combined income of more than \$60 000. Sixty-nine per cent have spouses/partners who are in paid employment, and are therefore significant contributors to household incomes.

Eighty-one per cent of respondents own their own home or are paying off a mortgage. Thirty-one per cent have between one and two dependent children, with 6.3% of these indicating that they were of school age. Thirty-one per cent have other family living in the area.

Owners/managers were asked if their business was dependent on the forests and to what degree. Most indicated that their level of dependency was high.

Tourism operators responded to surveys from throughout the region. The following table indicates respondents' place of residence. On average they have lived there for 13 years.

Township of residence	Respondents %
Gloucester	18.8
Dungog	18.8
Bellingen	18.8
Bulahdelah	12.5
Wauchope	6.3
Newcastle	6.3
Walcha	6.3
Dunbogan	6.3
Port Macquarie	6.3
Total	100.0

Ninety-four per cent of the responding businesses use between one and four reserve/forest areas. Those most utilised are Barrington Tops (25%), Dorrigo National Park (19%) and Chichester State Forest (19%). Other forests which businesses relied on were Gloucester Tops, Myall Shores, Mount Alum, North Brother Mountain, Katang Reserve, Bulahdelah State Forest, Bat Island, Trevor State Forest, forest adjacent to Bellingen, and Telegery Forest (6.3% each).

Community attitudes

Introduction

The central aim of this report is to present and analyse the results of a community attitudes survey that focused upon forest uses and values. The survey was conducted as part of the current RFA process being negotiated between New South Wales and the Commonwealth Government. This report details the responses from participants in the Lower North East CRA region.

The main aims of the survey were to assess social values relating to forest use and to provide the data in a form that could be geographically referenced and entered into a GIS program. The following five key subject areas were explored:

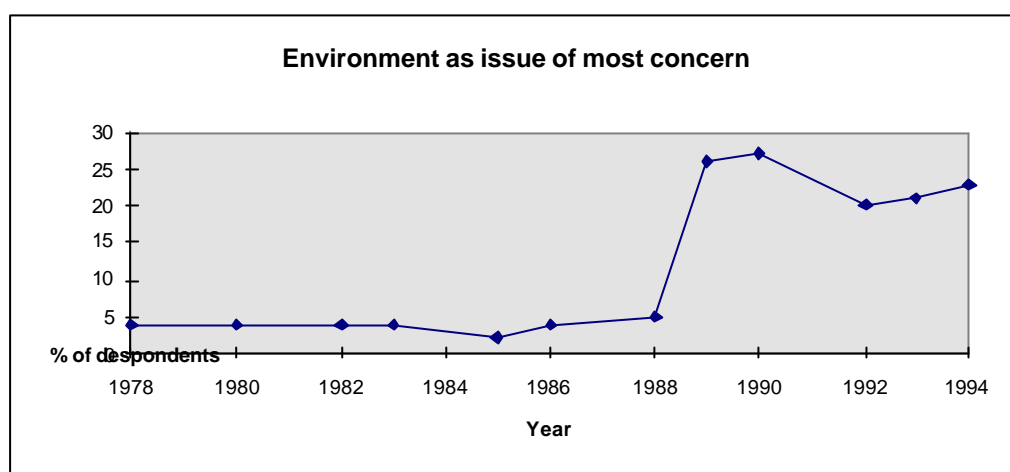
- demographic attributes of the respondents;
- employment details of the respondents;
- respondents' opinions towards social and environmental issues;
- respondents' current personal uses and desired future uses of forested land;
- the values respondents invest in forested land.

The popular rise of environmental interest in the wider community has attracted the attention of politicians and academics and resulted in a number of environment-oriented surveys. Whilst these surveys invariably concentrate upon different dimensions of people's attitudes towards the environment, making comparison difficult, there are normally two sections that may be compared and are useful for this report. These sections are the overall ranking of economic, social and environmental values, and the structure of people's environmental concern.

Ranking social, economic and environmental values

A standard question in past surveys has been to ask people to indicate from a list of issues which issues they are most concerned about. The environment forms a single category and is contrasted with competing economic and social values. Figure 1 shows the results of national surveys investigating the importance of environmental values. Slight changes in wording occurred after the 1986 survey but cannot be attributed to the rapid upsurge of concern in 1989 onwards. It is more likely that the massive media coverage given to global issues such as the greenhouse effect and the ozone 'hole' during this period raised the profile of the 'environment' as an important issue amongst the community (Crook and Pakulski 1995, Bell 1994). Whilst media attention has dropped since then, public interest and concern for environmental issues has not. What figure 1 shows is that almost 25% of the Australian population believe environmental issues are of more concern than other purely social or economic issues, symbolising the rise in importance of environmental values. However it should be noted that traditional concerns like health, education and employment still tend to attract more responses than the environment.

Figure 1



Adapted from Crook and Pakulski 1995 and EPA 1994¹

Structure of environmental concern

Researchers have tried to establish the structure of community concern. Two methods have been used. The first is a closed format question that asks respondents to indicate from a set list which environmental issues they are most concerned about. Table 1 shows national trends found through this type of surveying which identifies issues relating to forests to be of equal importance with greenhouse/ozone type issues, being second only to pollution as the community's main concern. It should be noted that comparing surveys in this way is problematic due to changes in wording and research techniques.

Table 1: Primary environmental concern (percentage of respondents)

Environmental issue	AES ²	ANOP ³	AES ²	ANOP ³
	1990	1991	1993	1993
Pollution	40	51	38	56
Industrial waste	10	8	9	12
Greenhouse/ozone	19	10	16	9
<i>Forest related issues</i>	<i>10</i>	<i>19</i>	<i>12</i>	<i>19</i>
Wildlife destruction	5	n/a	7	n/a
Land degradation	9	8	7	12

Alternatively, surveys can allow respondents to make more than one choice, indicating whether respondents were concerned about the issue at all, rather than having to establish

¹ 1994 figure derived from NSW population only. 1975-86 question was about the problem of most concern, 1988-94 question was about the most important issue the government should do something about.

² AES - Australian Electoral Studies - source Crook and Pakulski 1995

³ ANOP - Australian National Opinion Polls - source Lothian 1994

⁴ ABS - Australian Bureau of Statistics - source Lothian 1994

which is the most important issue (see table 2). Again forest issues ranked highly, being ranked as the second most important issue in a national 1992 poll.

Table 2: Multiple environmental concerns

Issue	ABS National 1992 ⁴
Air pollution	40
<i>Forest-related issues</i>	33
Ocean pollution	32
Freshwater pollution	30
Ozone	29
Industrial waste	21
Loss of species	19
Greenhouse	17
Land degradation	15

Forests rank highly in the structure of people's environmental concerns. It is within this context that the following community attitudes survey results will be analysed.

Demographic characteristics of sample

The demographic section of the questionnaire was split into two primary parts. The first section investigated general characteristics of the group being interviewed and was contrasted with 1991 census material for the postcode delineated Lower North East CRA region. This allows judgements to be made about the extent to which the Lower North East sample represents the Lower North East CRA region. The second part of the section was topic-specific, investigating the extent to which the proximity of people to forest issues influences their opinion, and is cross referenced in section 6.F — Demographic Distribution of Key Responses.

Demographic distribution of sample group

Table 3 summarises the results of the key demographic questions.

Table 3: Key demographic variables (sample profile, N = 111)

	Frequency ⁵	Percentage ⁶		Frequency	Percentage
Gender			Children		
Male	54	50	Yes	78	70.9
Female	54	50	No	32	29.1
Gender			Children		
Male	13	11.8	Yes	109	98.2
Female	18	16.4	No	2	1.8
35–44	27	24.5	Aboriginal or Torres Strait Islander identity		
45–54	21	19.1	Yes	5	4.6
55–64	9	8.2	No	104	95.4
65+	22	20			

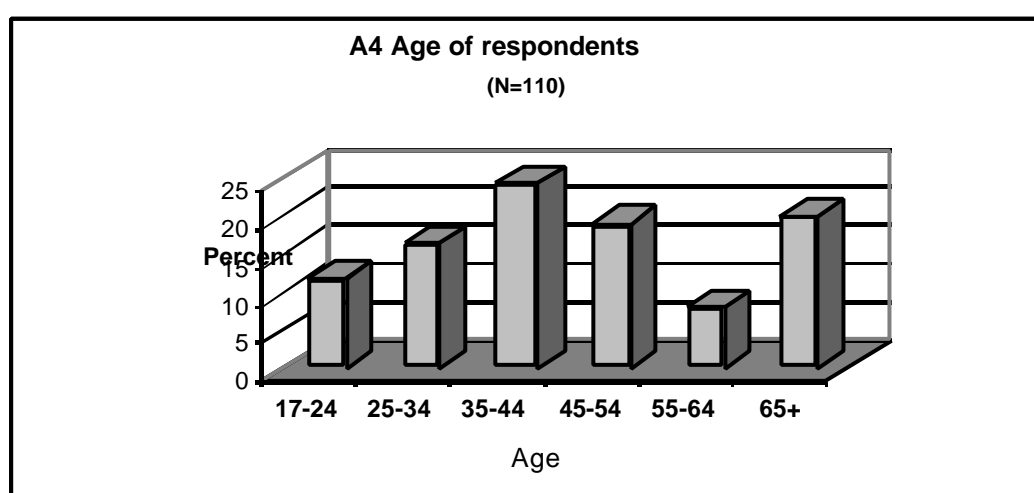
Gender

The percentage of female respondents was the same as the percentage of male respondents. Compared to the 1991 census data for the postcodes covered in the Lower North East CRA region our sample has a slightly higher representation of males than females. In the 1991 census 50.8% of the Lower North East region was female and 49.2% male.

Age of respondents

The age profile of respondents within the Lower North East study (figure 2) adequately represents the area's population as recorded in the 1991 census (table 4). The highest percentage of respondents were from the 35–44 years age bracket (24.5%), followed by 20% of respondents coming from the 65 years and older age bracket, reflecting the age distributions of the wider Lower North East population. However, the sample did have a higher than average number of respondents 25–34, 35–44 and over 65 years.

Figure 2



⁵ Frequencies do not necessarily add up to 111 due to incomplete values for some responses.

⁶ All percentages given in this report are valid percentages.

Table 4: Comparison of age between 1991 census data of the LNE Region and LNE CRA sample (percentage)⁷

Age (years)	1991 census	LNE CRA Sample (N=97)
17–24	10.9	11.8
25–34	14.6	16.4
35–44	14.6	24.5
45–54	10.4	19.1
55–64	9.4	8.2
65+	14.23	20

Parents

As table 3 shows, of the respondents surveyed 70.9% of the sample were parents. This variable could affect people’s opinions on subjects involving intergenerational equity and is investigated further in section 6.F.

Language spoken at home

Of the sample, two respondents (1.8%) reported speaking a language other than English in the home.

Aboriginal and Torres Strait Islander status

The sample of the LNE population revealed a higher than the national average percentage of people identifying themselves as Aboriginal or Torres Strait Islanders (1.6%). The level recorded for LNE CRA was 4.6%.

Proximity to forest issues

Figure 3 indicates the sample’s responses to three key questions gauging their proximity and awareness of key issues relating to forests, such as: their concern for, and awareness of, environmental/conservation issues represented by their membership of or subscription to environmental/conservation groups; their awareness of forest related industries represented by their employment in forest related industries; and their concern for, and awareness of, labour related issues represented by their membership of a trade union. The responses to these variables are cross referenced with key questions in section 6.F.

⁷ Census data includes whole LNE CRA population, whilst report data represent only those over 16 years of age.

Figure 3

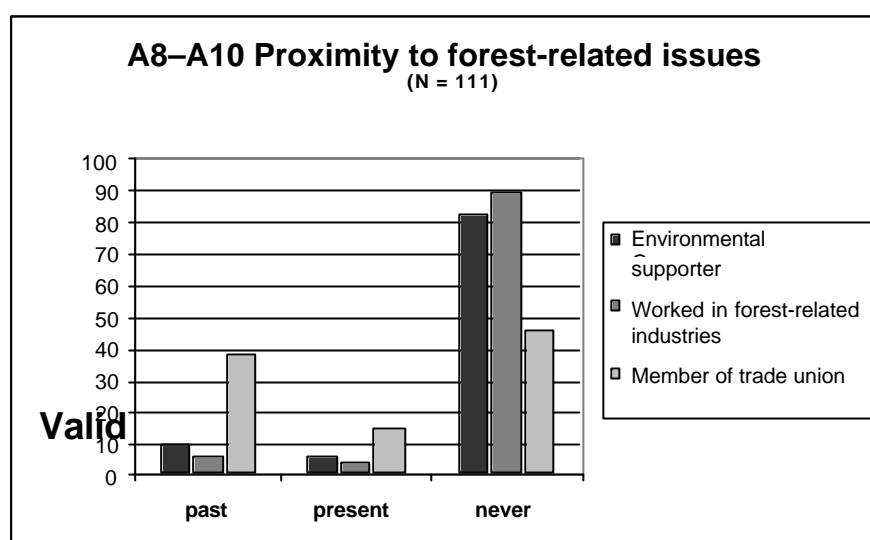


Table 5: Proximity to forest-related issues (N = 111)

	Past		Present		Never	
		%		%		%
Member of or subscriber to environmental or conservation group	11	9.9	7	6.3	93	83.8
Worked in forest-related industries	7	6.3	4	3.6	100	90.1
Member of a trade union	43	38.7	17	15.3	51	45.9

The data presented in table 5 and figure 3 indicate that 83.8% of respondents have never been members or subscribers to environmental or conservation groups, and 16.2% of people report that they have been (9.9%) or are presently (6.3%) members or subscribers to environmental or conservation groups.

Ninety per cent of people reported that they have never been employed in forest-related industries; 10% of people in the LNE CRA region report that they have been (6.3%) or are presently (3.6%) employed in forest related industries. No specification was supplied about the term ‘forest related industries’ with positive respondents potentially being employed in the economic, social or conservation sides of these industries.

Forty-six per cent of respondents reported that they have never been a member of a trade union. Over a half of respondents (54%) have been (38.7%) or are presently (15.3%) members of a trade union, indicating a ‘highly unionised’ sample from the LNE CRA.

Education and employment

Introduction

Respondents were asked about the level of education they attained, their income level, and their occupation. The level of education was compared to 1991 census data and cross-referenced with key variables in section 6.F.

Level of schooling

Figure 4 and table 6 indicate the responses to a question regarding the highest level of schooling attained by each respondent. Close to 73.8% of respondents had either attained the Year 10 school certificate (or equivalent) or higher, with the remainder of the respondents achieving lower levels of schooling.

Figure 4

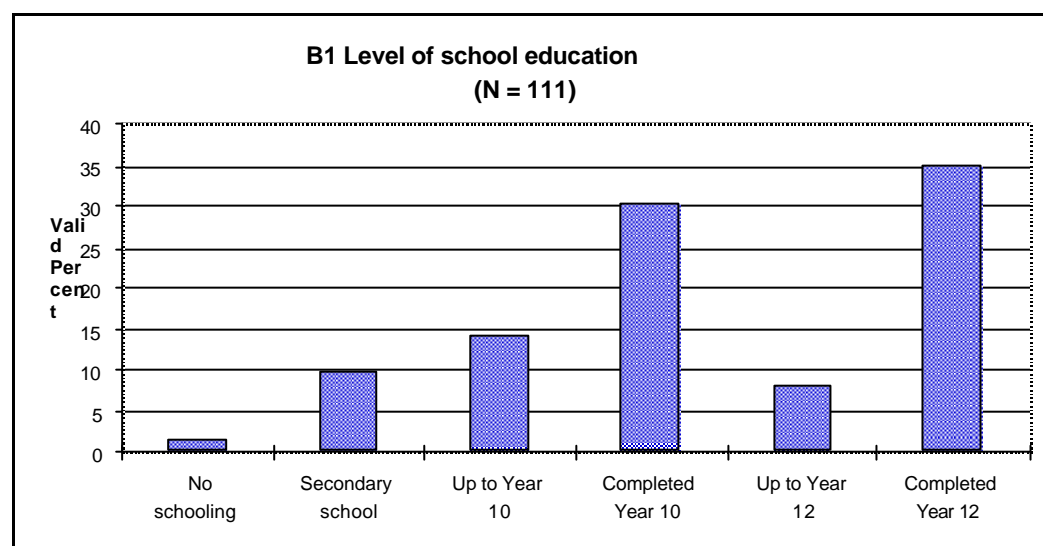


Table 6: Level of school education (N = 111)

	Frequency	Percentage
No schooling	2	1.8
Secondary school	11	9.9
Up to Year 10	16	14.4
Completed Year 10	34	30.6
Up to Year 12	9	8.1
Completed Year 12	39	35.1

Tertiary education and other qualifications

Respondents were asked about other tertiary, trade and industry qualifications they had attained, the frequencies and percentages are given in Table 7. Figure 5 shows the responses, indicating 30.1% of all respondents had not attained any formal qualifications other than

schooling. This is substantially lower than 1991 census figures for the same region that indicated 61.3% of the population had no formal qualifications after schooling. Census data also revealed that only 10% of the LNE population had university qualifications whereas in the sample group 27.2% had university degrees or diplomas. This indicates that our sample is biased towards the more educated segments of the community with a disproportionate number of less-educated people declining to be interviewed.

Figure 5

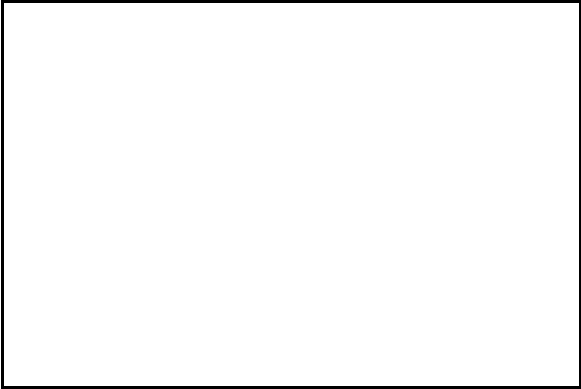


Table 7: Tertiary education and other qualifications (N = 104)

	Frequency	Percentage
Private industry awards	4	3.9
Trade certificates	26	25.2
TAFE qualifications	14	13.6
University degrees, diplomas	28	27.2
Not applicable	31	30.1

Employment and occupations

A high percentage of respondents who participated in the survey (47%) were not currently employed (see figure 6). However, of this figure close to half of the respondents were 65 years or over (19%). The census data for the LNE region indicates that approximately 42.4% of the population is not in the labour force (with a 12.12% unemployment rate).

Figure 6

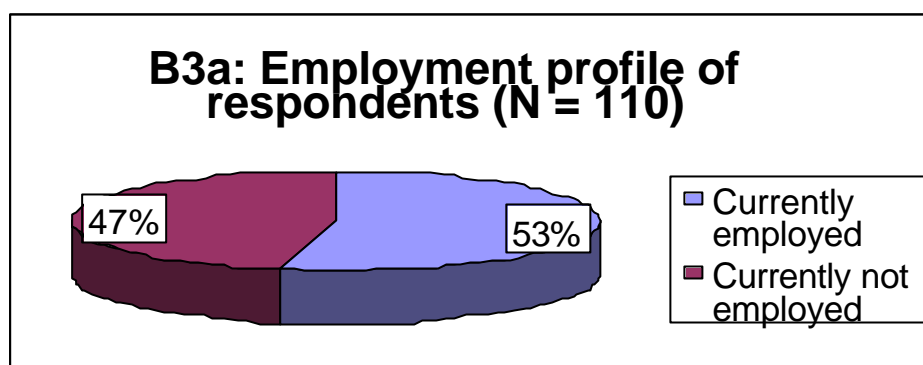
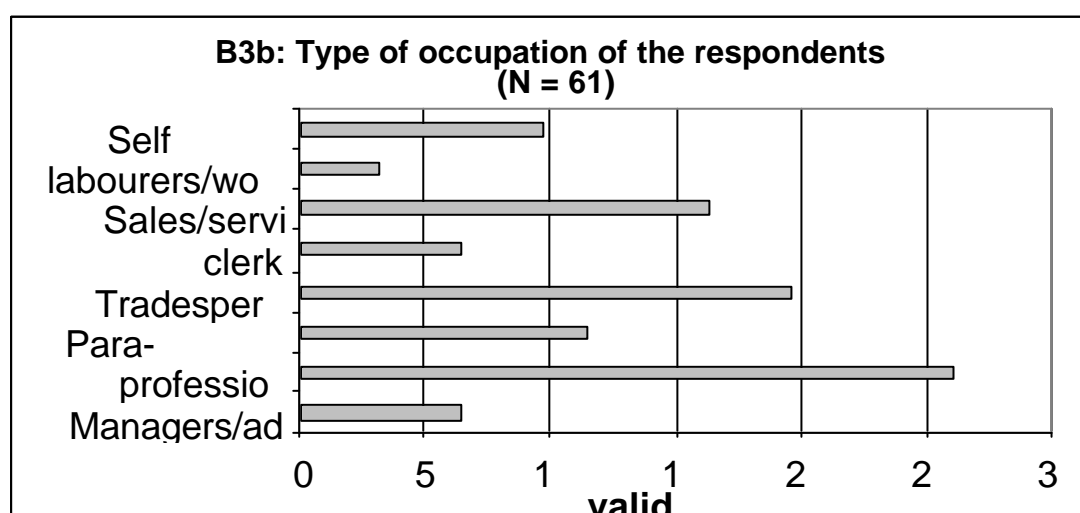


Table 8 and figure 7 show the distribution of employed people according to the Australian Bureau of Statistics occupation categories⁸. A high percentage of people surveyed (26.2%) fall into the occupation category of 'professional', which is significantly higher than the 1991 average of 12.9%. Tradespersons (19.7%) are also over-represented when compared to 1991 New South Wales averages (13.5%) whilst managers and administrators (6.6%, New South Wales 12.1%), clerks (6.6%, New South Wales 15.8%) and labourers /machine operators (3.3%, New South Wales 19.1%) are all under-represented.

The debate about the effect of socioeconomic status and educational levels upon people's environmental attitudes has led to little consensus amongst researchers (see for example Papadakis 1993, Cotgrove and Duff 1981). However it is possible that those who are highly educated, or of a high socioeconomic status (both of whom are disproportionately represented in this survey) may show more concern for environmental issues than the general public.

Figure 7



⁸ The category 'self-employed' was included although it is not an ABS category. The ABS category 'plant and machine operators and drivers' was incorporated into 'labourers and related workers' in this survey.

Table 8: Occupation types of respondents (N = 61)

	Frequency	Percentage
Managers and administrators	4	6.6
Professionals	16	26.2
Para-professionals	7	11.5
Tradespersons	12	19.7
Clerks	4	6.6
Salespersons and personal service workers	10	16.4
Labourers and related workers	2	3.3
Self-employed	6	9.8

Income

We can see from table 9 and figure 8 that a large percentage of respondents can be classified as medium to low income earners. Over half of respondents (56%) earned \$35 000 or less, with 25 per cent of respondents reporting to earn \$15 000 or less. This reflects the high percentage of people who are unemployed or out of the labour force.

Figure 8

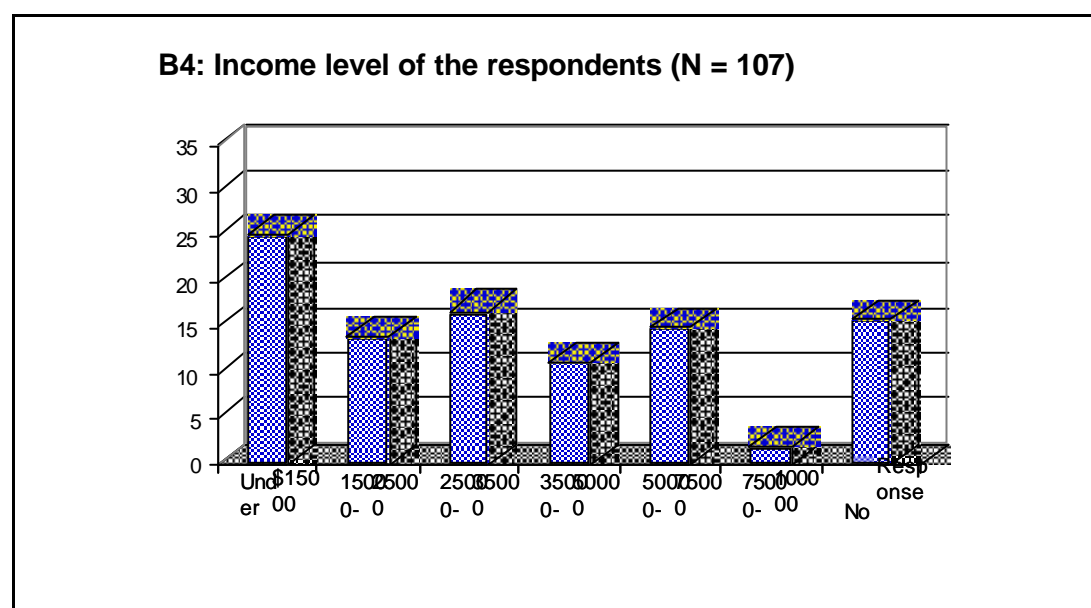


Table 9: Income levels of respondents (N = 90)

	Frequency	Percentage
Under \$15 000	27	25.2
15 000–25 000	15	14
25 000–35 000	18	16.8
35 000–50 000	12	11.2
50 000–75 000	16	15
75 000–100 000	2	1.9
No response	17	15.9

Social and environmental issues

Introduction

In order to investigate how people think about general environmental issues, four questions were asked on the extent and structure of their concern. The first question asked people to rank the importance of environmental issues when compared with other broad social and economic issues at an abstract level. The second question investigated the strength of people's concern for environmental issues as a whole, whilst the third question investigated the structure of people's concern for the environment. The last question looked at the strength and commitment people have for environmental issues by seeing how concern has been translated into behaviour.

Contemporary social issues

A list of seven contemporary social issues was read out to participants in the survey and they were asked to indicate which two issues they felt were of most importance to Australia at the present time. The list consisted of education, environment, the health system, unemployment, crime, promotion of economic growth, and discrimination.

Figure 9 and table 10 indicate that 'unemployment' and 'the environment' were ranked as the two most important issues by the LNE CRA region sample, with 43% of people surveyed indicating unemployment was one of the top two issues and 42% of people indicating the 'environment'. The 'health system' (38%) and 'education' (34%) ranked as the next most important issues for respondents. When compared to a recent face to face survey commissioned by the New South Wales Environment Protection Authority (EPA 1994) which asked a similar question for the whole of New South Wales, some differences become apparent. The EPA study found unemployment (50.4%) and education (30.9%) as the two most frequently mentioned responses followed by the health system (29%), crime (23.9%) and the environment (22.8%). The results of the LNE CRA region show that people value the environment and the health system more highly than does the general New South Wales population (the EPA study).

Figure 9

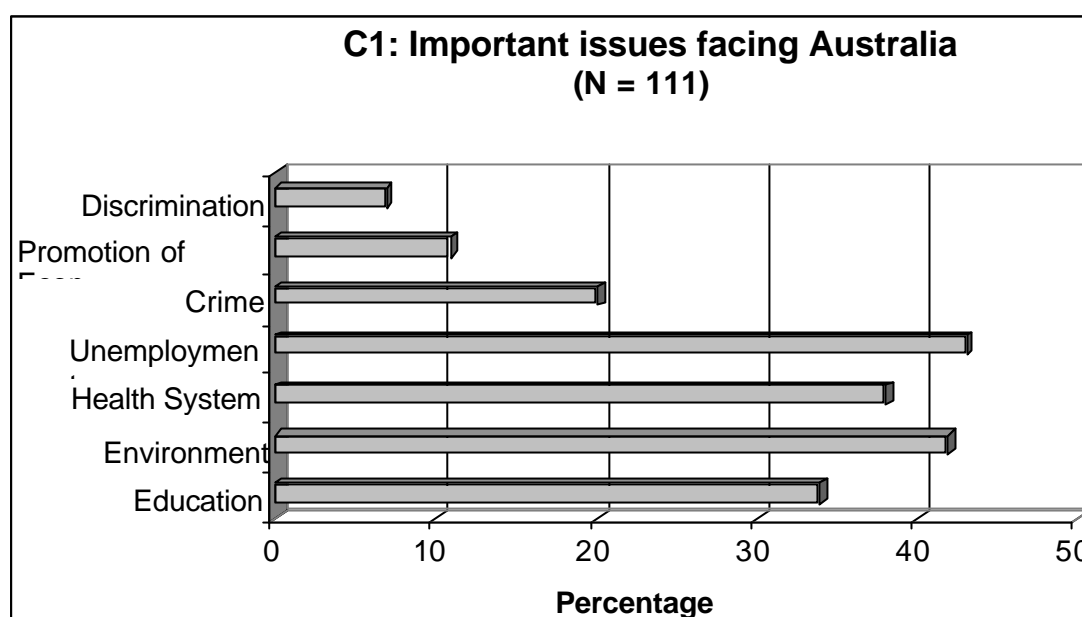


Table 10: Most important issues facing Australia (N = 111)

	Frequency	Percentage
Discrimination	8	7
Promotion of economic growth	12	11
Crime	22	20
Unemployment	48	43
Health system	42	38
Environment	47	42
Education	38	34

Social concern for the environment

Of a list of three statements relating to the level of concern shown by society for the environment, respondents were asked to indicate which statement most closely matched their own attitude. Table 11 indicates that 71.2% of respondents felt that society doesn't show enough concern for the environment; 21.6% indicated that society shows about the right amount of concern, and 6.3% of respondents indicated that society shows too much concern for the environment. There is a high degree of concern and interest within the sample group towards environmental issues, with almost three quarters indicating they would prefer to see more attention given to environmental values.

Table 11: Social concern for the environment (N = 111)

	Frequency	Percentage
Society shows too much concern for the environment	7	6.3
Society shows about the right amount of concern for the environment	24	21.6
Society doesn't show enough concern for the environment	79	71.2

Environmental issues of most concern

Participants were asked to indicate the two environmental issues about which they were most concerned, in order to evaluate issues of prime importance by region, and demonstrate the structure of people's environmental concerns.

Table 12 indicates that for the Lower North East CRA region 42% of respondents indicated forest-related issues⁹ such as logging and deforestation were the environmental issues they were most concerned about. Pollution issues, particularly water pollution (20%), were also high in the structure of people's environmental concerns. Figure 10¹⁰ groups together the primary categories of issues showing that both forest-related issues and pollution-related issues were the primary concerns of the respondents. This reveals the high symbolic value both forests and pollution command in the structure of people's environmental concern.

⁹ Due to the opening sentences of the questionnaire in which the term 'forest' is mentioned (see Appendix 1), there is the potential for respondents' answers to be structured in ways that prioritise forest-related issues.

¹⁰ The categories for figure 10 were created as follows: global atmospheric issues (greenhouse effect/global warming/ozone layer/CFCs); forest-related issues (deforestation/logging/biodiversity); pollution-related issues (beach pollution, water pollution, air pollution, unspecified pollution, cars, industrial emissions), waste related issues (production of waste, waste disposal, litter); current development paradigm (general consumption); agricultural issues (pesticides/fertilisers, land degradation/erosion/salinity), other issues (energy production, water conservation, mining, population pressure, noise pollution, media/education, urban sprawl).

Figure 10

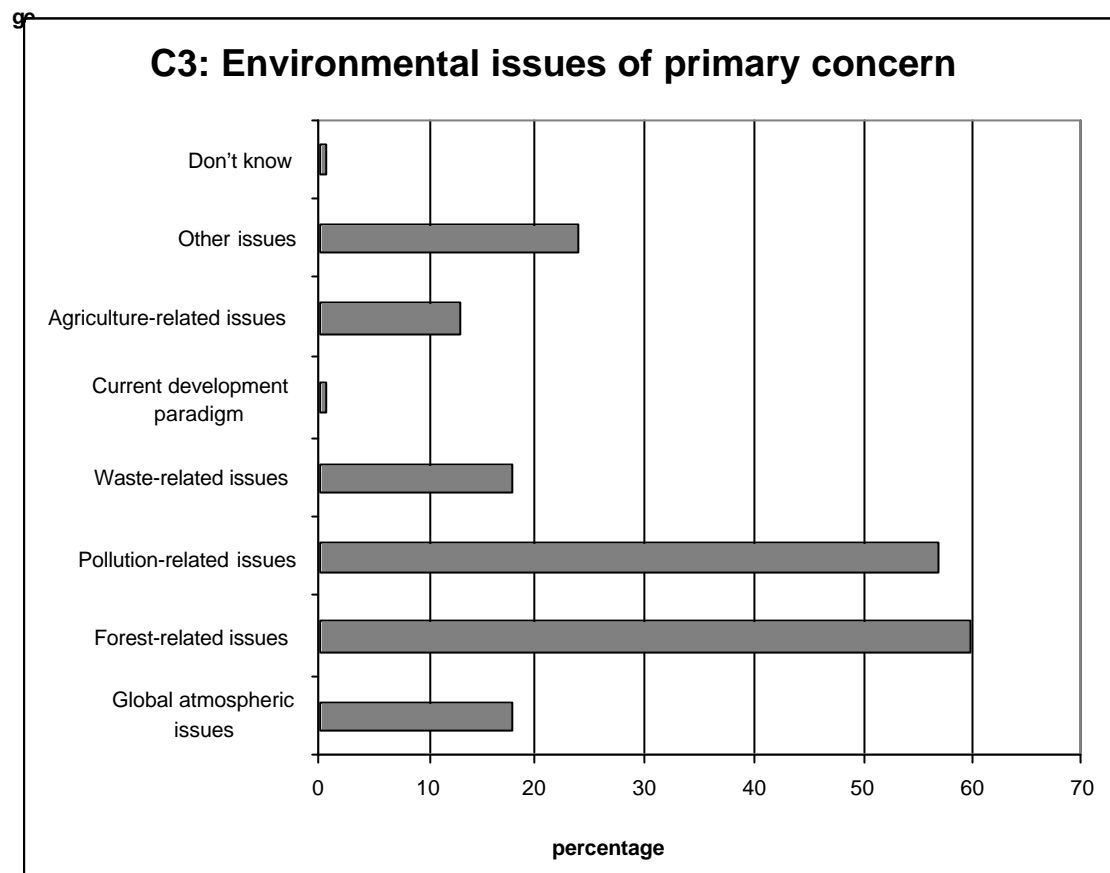


Table 12: Environmental issues of most concern (N = 111)

	Frequency	Percentage
Greenhouse effect/global warming	13	12
Ozone layer/CFCs	7	6
Deforestation/logging	47	42
Biodiversity loss	20	18
General consumption	1	1
Population pressure	1	1
Cars	1	1
Beach pollution	4	4
Water pollution	22	20
Water conservation	9	8
Air pollution	14	13
Noise pollution	3	3
Unspecified pollution	20	18
Litter	3	3
Production of waste	6	5
Waste disposal	11	10
Land degradation/erosion/salinity	13	12
Energy production	4	4
Pesticides/fertilisers	1	1
Industrial emission	1	1
Urban sprawl	1	1
Mining	4	4
Media/education	2	2
Don't know	1	1
Others	1	1

Environmentally responsible behaviour

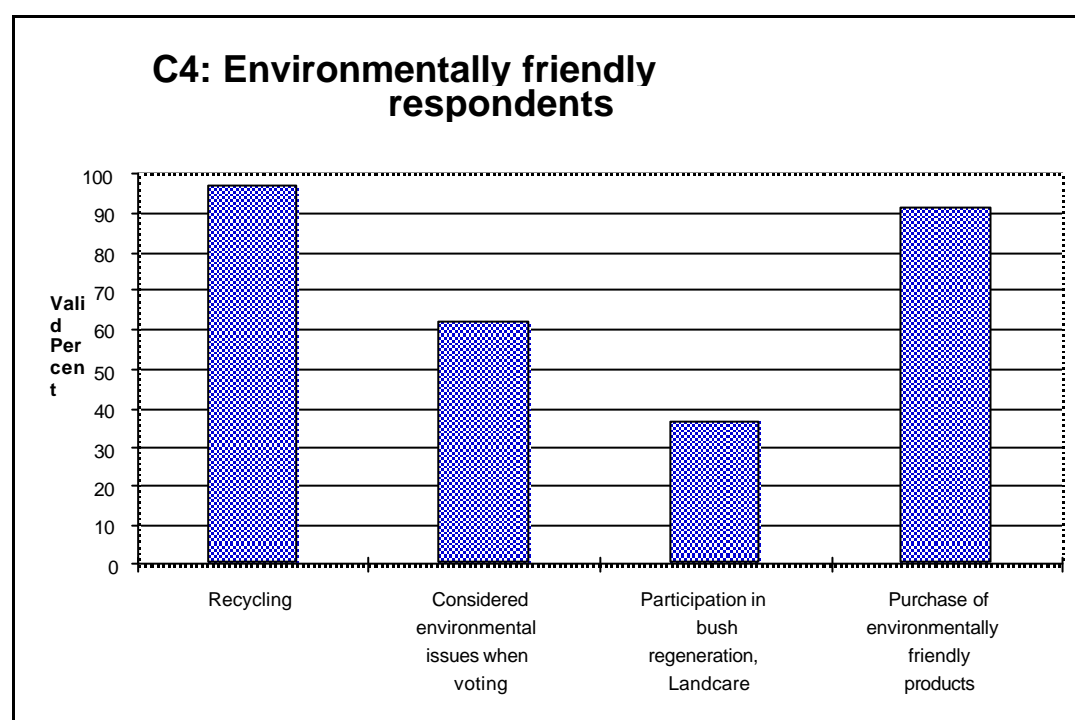
In order to assess how people's environmental concerns are translated into environmentally responsible behaviour (as a measure of their commitment to environmental issues) the survey asked participants whether they had adopted any of the following practices in an effort to become more environmentally friendly in the last five years: recycling (waste-minimisation behaviour); consideration of environmental issues when voting (political activity); participation in bush regeneration, Landcare or an active anti-litter campaign (active participation); and purchase of environmentally friendly products (consumption behaviour).

Table 13 reveals a strong performance by the participants on behaviour such as recycling, with 97.2% of respondents indicating they recycle, and the purchase of environmentally friendly products (91.7%). More committed forms of behaviour also ranked relatively highly showing a strong commitment and interest in environmental issues within the sample (see Table 13 and figure 11).

Table 13: Adoption of environmentally friendly practices (N = 97)

	Frequency (Yes)	Percentage
Recycling	106	97.2
Considered environmental issues when voting	68	62.4
Participation in bush regeneration, Landcare or an active anti-litter campaign	41	37.3
Purchase of environmentally friendly products	99	91.7

Figure 11



Uses of forested land

Introduction

There are two dimensions to people's attitudes towards forest land use. The first is their actual personal use, and the second is how they would like to see the land used at a broader scale. Factors influencing people's ideas include current land categories, the two most important ones being the division between State forests and national parks. To investigate these factors people were asked about their current usage patterns and how they think the land should be managed. If people were aware of the differences between national parks and State forests they could indicate different uses for each of these land units; if they were unaware, forested land was referred to under the umbrella term of 'public forests'. To further investigate uses of forested land a series of statements were read out to the respondents where they could indicate the extent to which they disagreed or agreed with the statement. To differing extents all the questions in this section indicate the way people value forested land.

Personal uses of forested land

Awareness of national park/State forest distinctions

Respondents were asked about their awareness of the difference between State forests and national parks, and based on their response they were streamed into a series of questions. Nearly two thirds of respondents (66.4%) reported an awareness of the difference between State forests and national parks (refer to figure 12) whilst one third (33.6%) of respondents were unaware of the difference between State forests and national parks.

Figure 12

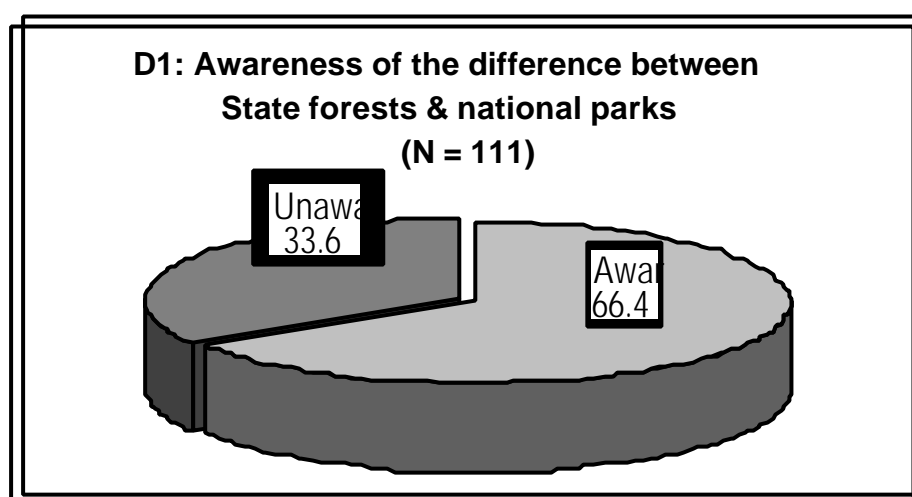


Table 14 shows the frequency of visits to State forests and national parks (for people aware of the difference in tenure between the two) and public forests. It can be seen that a small percentage of respondents visit forested areas (State forests, national parks and public forests) on a very regular basis, with 10.8%, 6.8% and 8.1% respectively, reporting visiting these areas more than once a week. A high percentage of respondents reported visiting national parks (24.3%) and public forests (21.6%) once every 2–3 months. A similar level of respondents reported hardly ever visiting State forests (18.9%), national parks (17.6%) and public forests (21.6%).

Table 14: Frequency of visits to public forests

	Frequency			Percentage		
	N=74 State forests	National parks	N=37 Public forests	State forests	National parks	Public forests
More than once a week	8	5	3	10.8	6.8	8.1
Fortnightly	2	5	3	2.7	6.8	8.1
Once a month	9	9	3	12.2	12.2	8.1
Once every 2–3 months	10	18	8	13.5	24.3	21.6
Once every 6 months	12	10	3	16.2	13.5	8.1
Once a year	14	12	6	18.9	16.2	16.2
Hardly ever	14	13	8	18.9	17.6	21.6
Never	5	2	3	6.8	2.7	8.1
Not applicable	37	37	74	–	–	–

Entrance fees

Table 15 shows that 61.6% of respondents who were aware of the difference between State forests and national parks reported having paid an entrance fee to visit a State forest or national park. There was, however, a lower percentage of respondents (50%) reporting paying an entrance fee who were not aware of the difference between State forests and national parks.

Table 15: Payment of entrance fee to visit forested land (N = 109)

	Frequency (Yes)	Percentage (Yes)	Frequency (No)	Percentage (No)
State forests & national parks (N = 73)	45	61.6	28	38.4
Public forests (N = 36)	18	50	18	50

Willingness to pay

Table 16 shows the results of the question inquiring about respondents' willingness to pay an entrance fee to forested land. Figure 13, 14, 15 and table 15 highlight the differences in responses for State forests and national parks. Fifteen per cent of respondents reported that they would not be prepared to pay an entrance fee to State forests compared to 18% for national parks. The most popular amount people would be willing to pay was \$4–6.

Ten per cent of respondents who did not know the differences between National parks and state forests would not be prepared to pay an entrance fee to public forests.

Table 16: Amount respondents are prepared to pay to visit forested land

	Frequency			Percentage		
	N=74 State forests	National parks	N=37 Public forests	State forests	National parks	Public forests
None	11	13	4	15.1	17.8	10.8
\$1–3	17	13	9	24.7	17.8	24.3
\$4–6	30	33	17	41.1	45.2	45.9
\$7–9	8	8	–	11	11	–
\$10–15	5	5	6	6.8	6.8	16.2
\$16–20	1	1	1	1.4	1.4	2.7
\$21–30	–	–	–	–	–	–
More than \$30	–	–	–	–	–	–
Not applicable	38	38	74	–	–	–

Activities in forested land

The main activities people undertake when they visit public forests are bushwalking, nature appreciation, and picnics. Camping, touring, visiting wilderness areas and swimming/surfing are the next most popular activities as shown in table 17 and figures 16 and 17. People who knew the difference between national parks and state forests were more likely to visit forests for bushwalking, nature appreciation, picnics and camping (figure 16), whilst those who did not know the difference were more likely to visit public forests for bushwalking, picnics, nature appreciation, and touring (figure 17).

Table 17: Typical activities in forested land

	Frequency		Percentage	
	Aware of difference	Unaware of difference	Aware of difference	Unaware of difference
	(SF & NP) N = 73	(SF & NP) N = 38	(SF & NP)	(SF & NP)
Picnics	23	17	31.51	44.74
Camping	22	7	30.14	18.42
Bushwalking	50	22	68.49	57.89
Nature appreciation	28	13	38.36	34.21
Visit wilderness	11	3	15.07	7.89
4WD	4	1	5.48	2.63
Cycling	2	1	2.74	2.63
Fishing	3	3	4.11	7.89
Touring	8	7	10.96	18.42
Educational and scientific	5	–	6.85	–
Canoeing	1	–	1.37	–
Hunting	1	–	1.37	–
Swim, surf	11	4	15.07	10.53
Skiing	2	–	2.74	–
Employment	2	–	2.74	–
Cultural appreciation	1	1	1.37	2.63
Spiritual	2	2	2.74	5.26

Figure 13

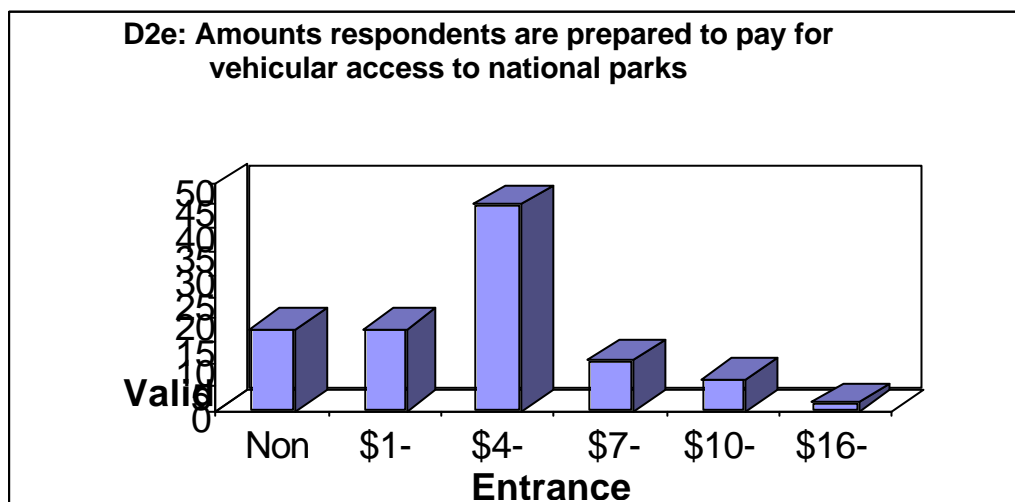


Figure 14

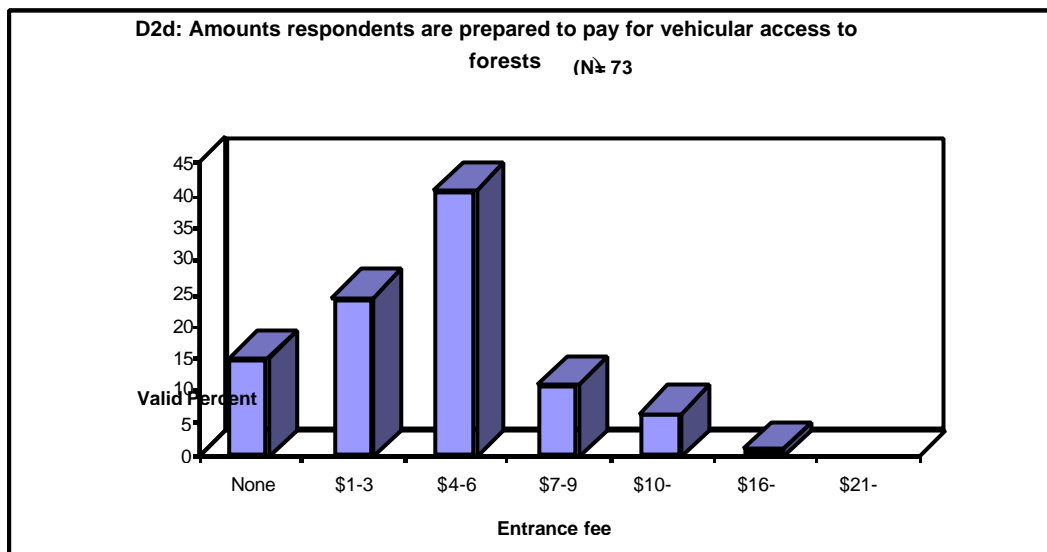


Figure 15

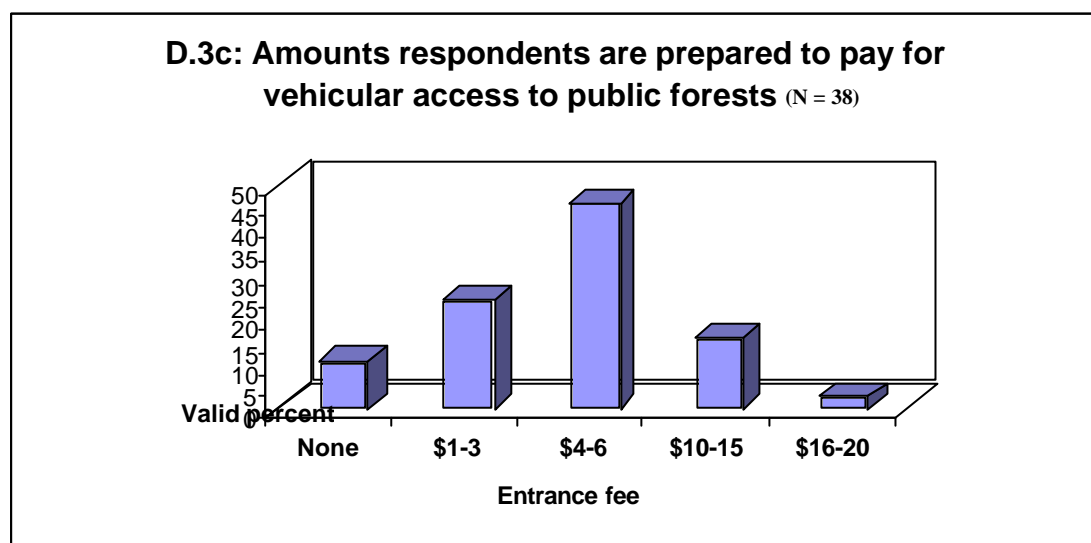


Figure 16

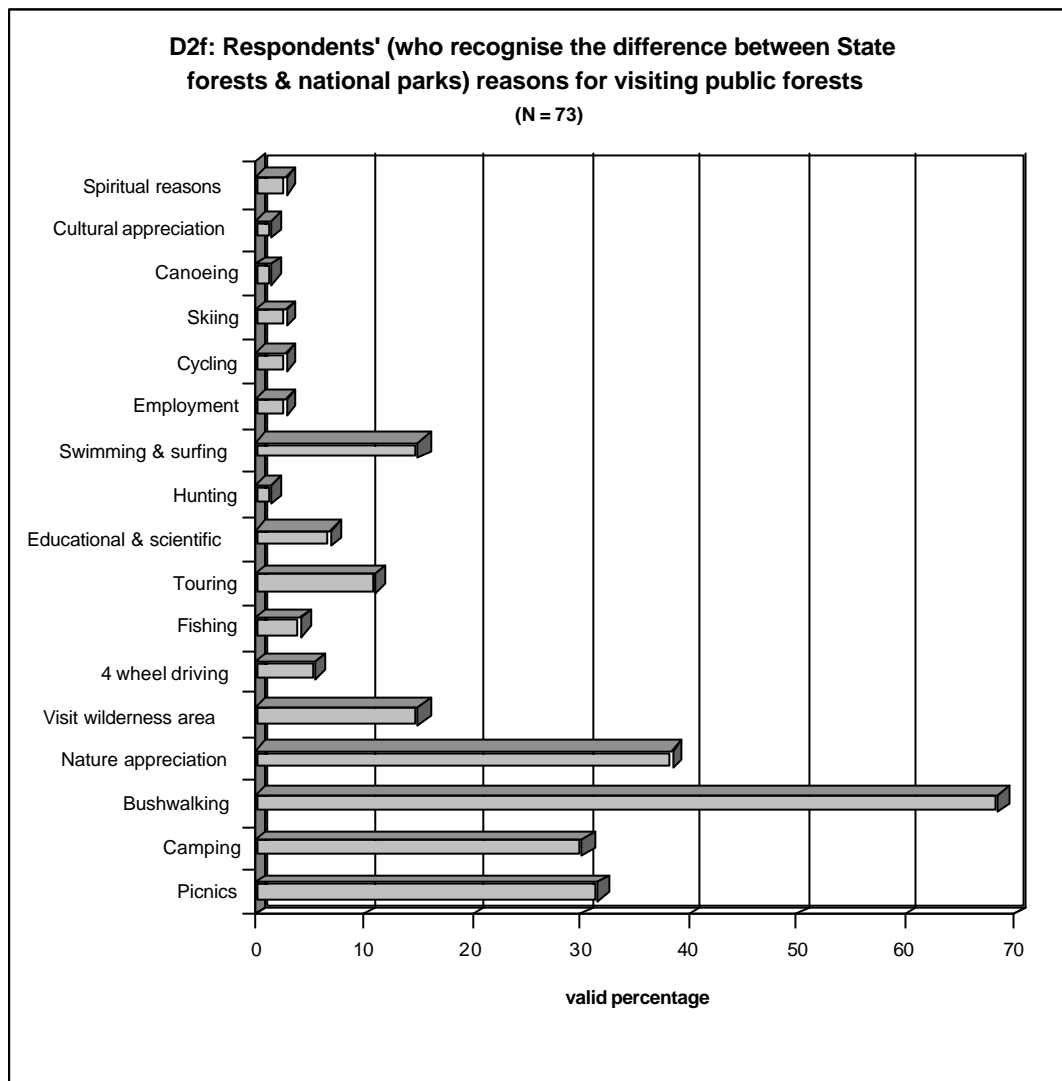
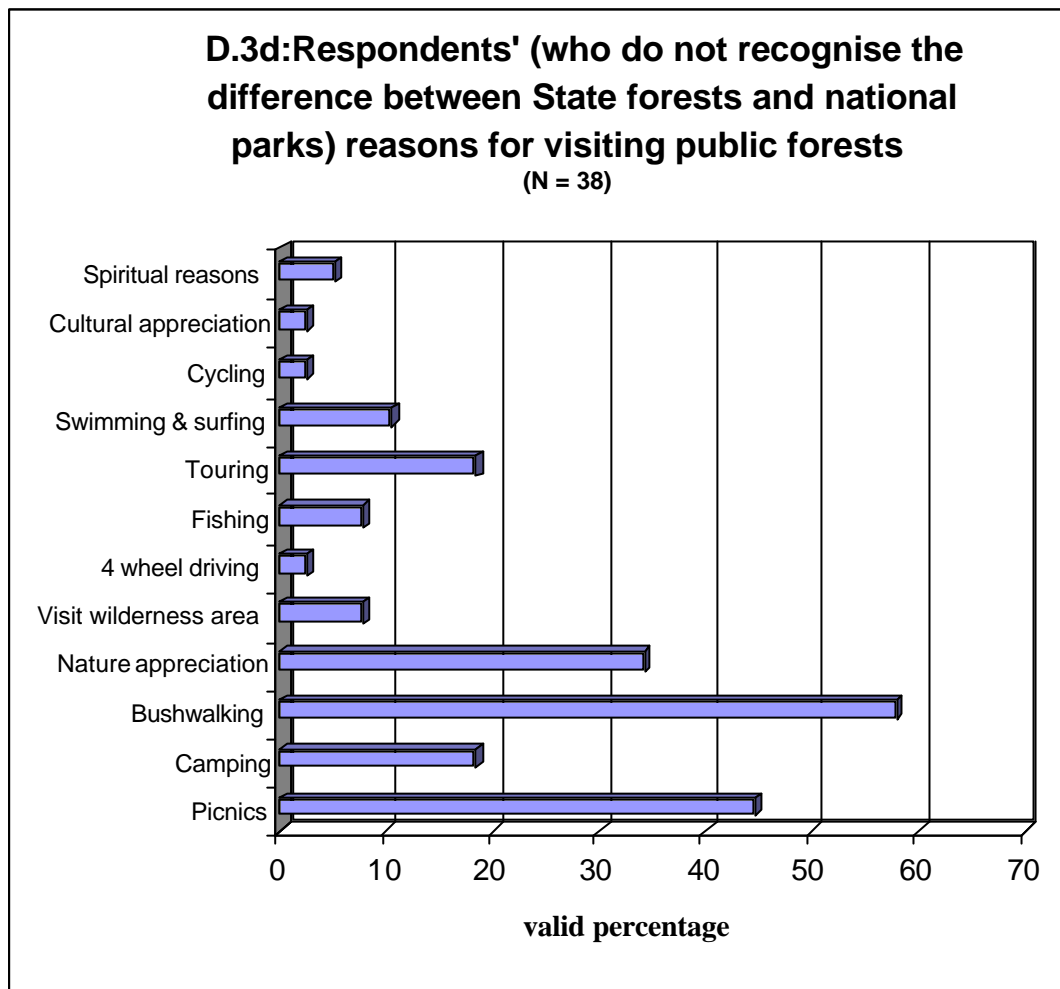


Figure 17



Broad-scale uses of forested land

Priority uses of forested land

Figures 18 and 19 indicate the responses from questions investigating what priority respondents gave to various activities with relation to public forests.

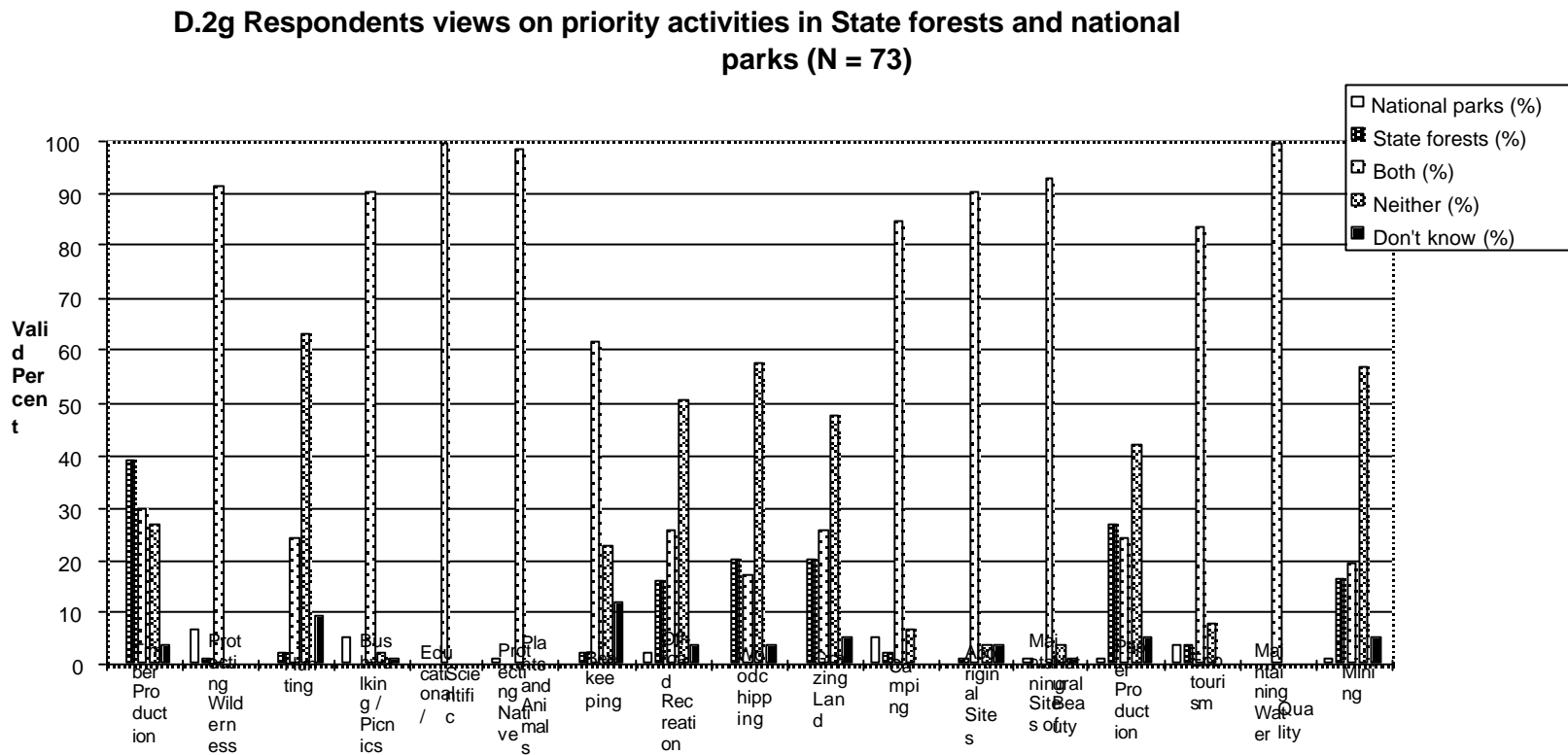
Figure 18 and table 18 indicate that protecting wilderness, bushwalking/picnics, education/scientific uses, protecting native plants and animals, camping, protecting Aboriginal sites, maintaining sites of natural beauty, and maintaining water quality, should all be high priorities for managers of State forests and national parks. Respondents did not think hunting, woodchipping, mining and off-road recreation should be high priorities for managers in either land tenure. There were mixed responses for economic priorities with respondents evenly distributed between those who thought economic activities should be a high priority in both, in State forests only, or not in either.

Table 18: Priority uses of State forests and national parks

Priorities (N = 73)	National parks (%)	State forests (%)	Both (%)	Neither (%)	Don't know (%)
Timber production	0	39.2	29.7	27	4.1
Protecting wilderness	6.9	1.4	91.8	0	0
Hunting	0	2.7	24.3	63.5	9.5
Bushwalking/picnics	5.4	0	90.5	2.7	1.4
Educational	0	0	100	0	0
Protecting native plants and animals	1.4	0	98.6	0	0
Beekeeping	0	2.7	62.2	23	12.2
Off-road recreation	2.7	16.4	26	50.7	4.1
Woodchipping	0	20.3	17.6	58.1	4.1
Grazing land	0	20.5	26	47.9	5.5
Camping	5.5	2.7	84.9	6.8	0
Aboriginal sites	0	1.4	90.5	4.1	4.1
Maintaining sites of natural beauty	1.4	0	93.2	4.1	1.4
Paper production	1.4	27	24.3	41.9	5.4
Ecotourism	4.1	4.1	83.8	8.1	0
Maintaining water quality	0	0	100	0	0
Mining	1.4	16.7	19.4	56.9	5.6

D.2g Respondents views on priority activities in State forests and national parks (N = 73)

Activity	National parks (%)	State forests (%)	Both (%)	Neither (%)	Don't know (%)
Recreation	30	30	30	10	0
Wilderness	92	2	2	2	0
Fishing	25	2	63	10	0
Hiking / Picnics	91	5	2	2	0
Educational / Cultural	100	0	0	0	0
Scientific	100	0	0	0	0
Protecting and Natural Values	99	1	0	0	0
Planting	62	2	23	12	0
Recreation	2	16	51	4	0
Horse riding	21	18	58	4	0
Swimming	21	20	48	6	0
Camping	86	2	7	0	0
Original Sites	91	2	4	0	0
Managing Bush	93	2	4	0	0
Recreation	27	27	42	5	0
Tourism	4	3	84	9	0
Maintaining Water Quality	100	0	0	0	0
Mineral	17	17	57	6	0

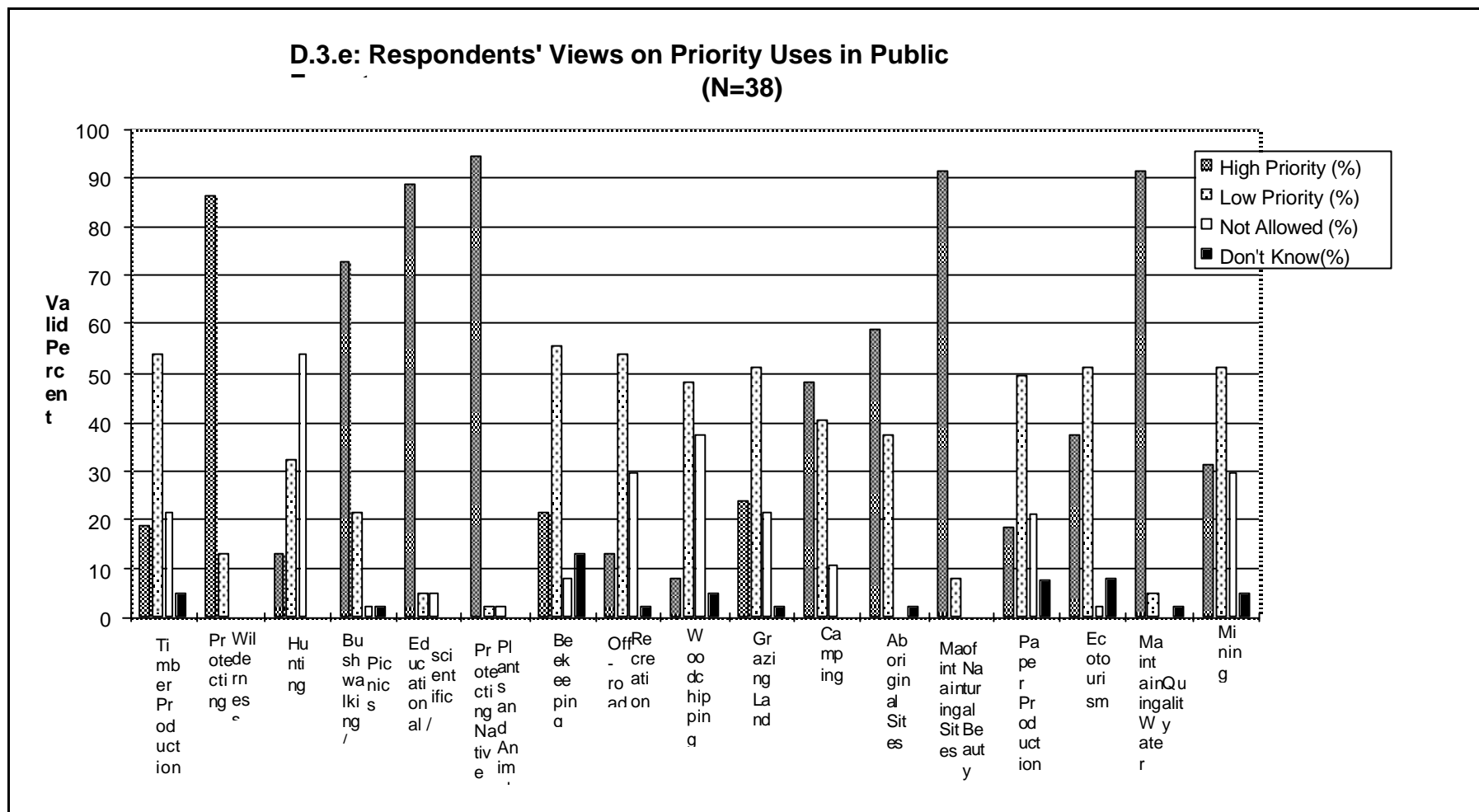


Results for those who were not aware of the differences between State forests and national parks are similar to those who were aware of the differences. the question for this group was modified slightly to allow them to indicate what activities should be a high priority, low priority and not allowed. The three activities which received the highest number of responses for the high priority category include protection of native plants and animals, maintenance of sites of natural beauty and maintenance of water quality. Activities which received a large number of responses as a low priority for public forests include beekeeping, off-road recreation and timber production. Hunting received the highest number of 'not allow' responses out of all the listed activities. It should be noted that there were some difficulties with the 'hunting' category with some people being pro-hunting feral animals but anti-hunting native animals.

Table 19: Priority uses of public forests

Priorities (N = 65)	High priority (%)	Low priority (%)	Not allowed (%)	Don't know (%)
Timber production	18.9	54.1	21.6	5.4
Protecting wilderness	86.5	13.5	0	0
Hunting	13.5	32.4	54.1	0
Bushwalking/picnics	73	21.6	2.7	2.7
Educational	89.2	5.4	5.4	0
Protecting native plants and animals	94.6	2.7	2.7	0
Beekeeping	21.6	55.8	8.1	13.5
Off-road recreation	13.5	54.1	29.7	2.7
Woodchipping	8.1	48.6	37.8	5.4
Grazing land	24.3	51.4	21.6	2.7
Camping	48.6	40.5	10.8	0
Aboriginal sites	59.5	37.8	0	2.7
Maintaining sites of natural beauty	91.9	8.1	0	0
Paper production	18.4	50	21.1	7.9
Ecotourism	37.8	51.4	2.7	8.1
Maintaining water quality	91.9	5.4	0	2.7
Mining	31.5	51.4	29.7	5.4

Figure 19



Uses, attitudes and beliefs

The following section of the questionnaire explored respondents' attitudes to different uses of forested land and the conflict, perceived or actual, between certain uses. A series of statements were read out to the participants and they were asked to indicate whether they strongly agreed, agreed, were not sure, disagreed, or strongly disagreed with the statement.

Aboriginal values

A large majority of Aboriginal sites, both historical and sacred, are to be found in State forests and national parks throughout New South Wales. In order to assess participants' attitude to the preservation of Aboriginal sites and the importance of this goal over all other uses of forested land, the questionnaire asked participants' response to the following statement '*Aboriginal sites of significance should be protected, and are more important than other uses of forested land*'.

Figure 20

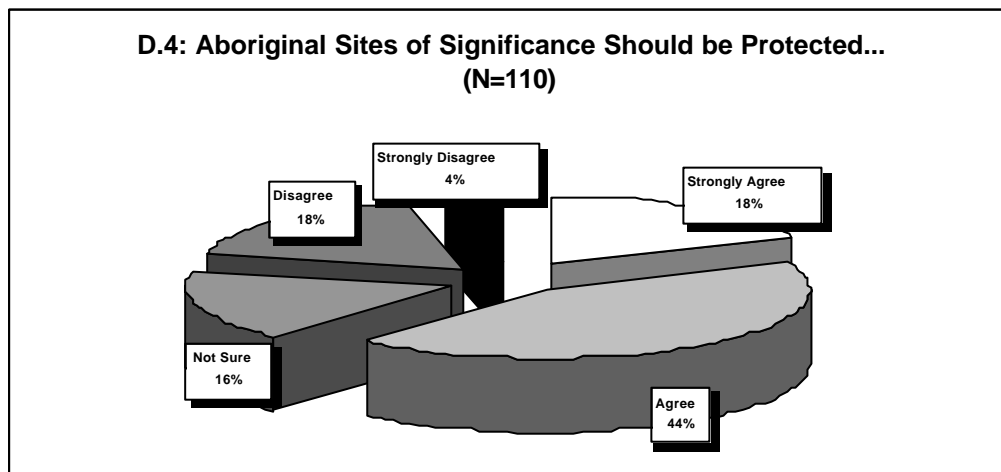


Figure 20 shows that 61.8% of respondents believe Aboriginal sites should be protected and are more important than other uses of forested land. A significant percentage of respondents were not sure (16.4%), and a total of 21.8% disagreed (table 20).

Table 20: Aboriginal sites of significance should be protected, and are more important than other uses of forested land (N = 110)

	Frequency	Percentage
Strongly agree	20	18.2
Agree	48	43.6
Not sure	18	16.4
Disagree	20	18.2
Strongly disagree	4	3.6

Coexistence of environmental and economic goals

State natural resource management policy aims to ensure environmental protection and forestry industries exist side-by-side. To investigate community attitudes towards this policy objective the statement '*Environmental protection cannot co-exist with forestry industries*' was tested on the participants.

Figure 21

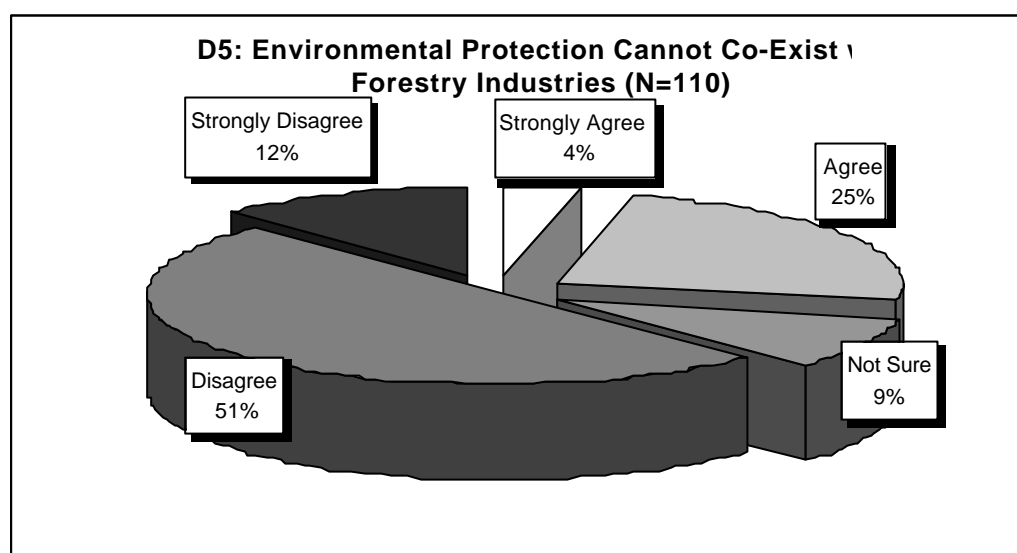


Figure 21 and Table 21 show the responses to the above statement indicating that close to two-thirds of the respondents disagree (50.9%) to strongly disagree (11.8%) with the above statement, meaning that most of those surveyed felt that environmental protection can co-exist with forestry industries. The figures in table 21 further show the relatively low number of people who strongly agreed (3.6%) to agree (24.5%) with the statement.

Table 21: Environmental protection cannot co-exist with forestry industries (N = 110)

	Frequency	Percentage
Strongly agree	4	3.6
Agree	27	24.5
Not sure	10	9.1
Disagree	56	50.9
Strongly disagree	13	11.8

Economic importance of the forestry industry to small communities

The statement '*The forestry industry can be economically important for some small communities providing valuable employment, and therefore should be maintained*' was tested on the participants in order to elicit their attitude to the maintenance of primary industry activities in small towns in the light of the perceived economic importance of such activities.

Figure 22

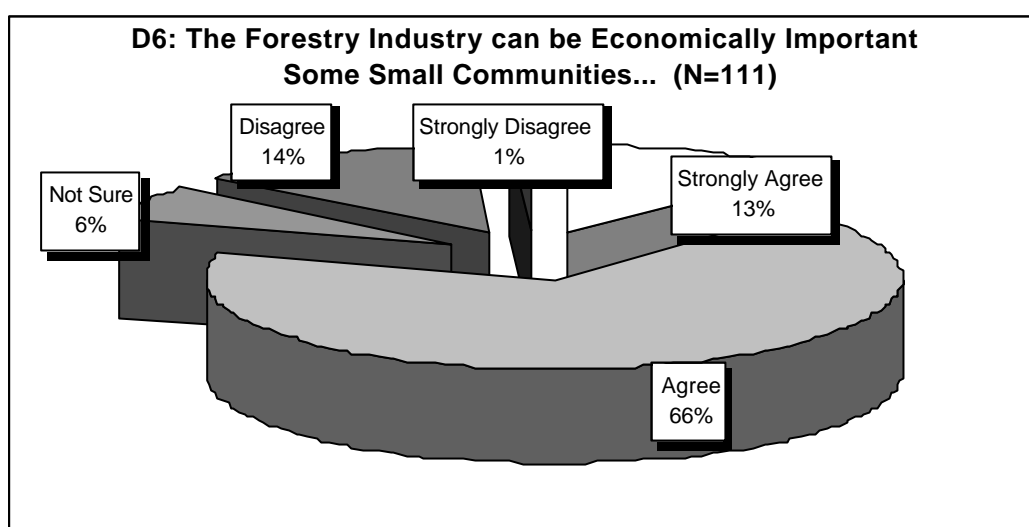


Figure 22 and table 22 show that most respondents believe some small communities are economically reliant upon the forestry industry and that it should be sustained for these small communities. A significant percentage (12.6%) of respondents tended to strongly agree with the statement and 66.7% agreed with the statement. Only 0.9% of people strongly disagreed and 13.5% disagreed with the statement.

Table 22: The forestry industry can be economically important for some small communities, providing valuable employment, and therefore should be maintained (N = 111)

	Frequency	Percentage
Strongly agree	14	12.6
Agree	74	66.7
Not sure	7	6.3
Disagree	15	13.5
Strongly disagree	1	0.9

International dimension of forest use

To explore the international dimension of forest use, and more specifically timber products, the statement '*Australia should draw its timber products from Australian forests rather than overseas forests even if overseas timber products are cheaper*' was tested on participants.

Figure 23

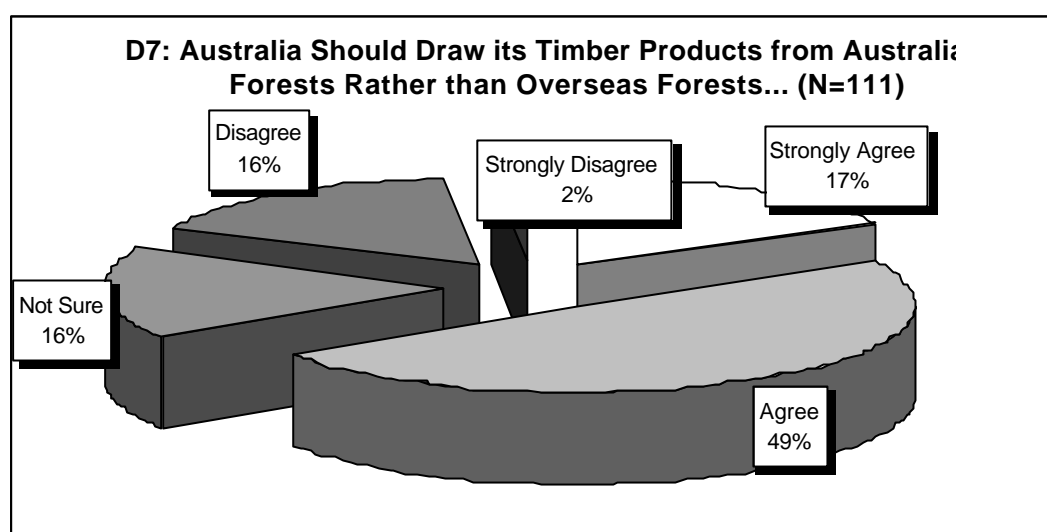


Figure 23 indicate that most respondents agree with the above statement, and wish to see Australia draw its timber product needs from Australian forests rather than overseas. Table 23 shows that most people thought timber should be sourced from Australian forests. Less than 18% of respondents indicated a negative response to the statement

Table 23: Australia should draw its timber products from Australian forests rather than overseas forests even if overseas timber products are cheaper (N = 111)

	Frequency	Percentage
Strongly agree	19	17.3
Agree	53	48.2
Not sure	18	16.4
Disagree	18	16.4
Strongly disagree	2	1.8

Conservation and State Income

To contrast conservation uses with economic uses (such as timber production) the following statement was tested on the survey participants '*I would like to see more forested land conserved even if it means a loss of income to the State from timber harvesting*'. The question also explored participants' responses to the situation of potential conflict between conservation use and State income from the use of forests for timber harvesting.

Figure 24

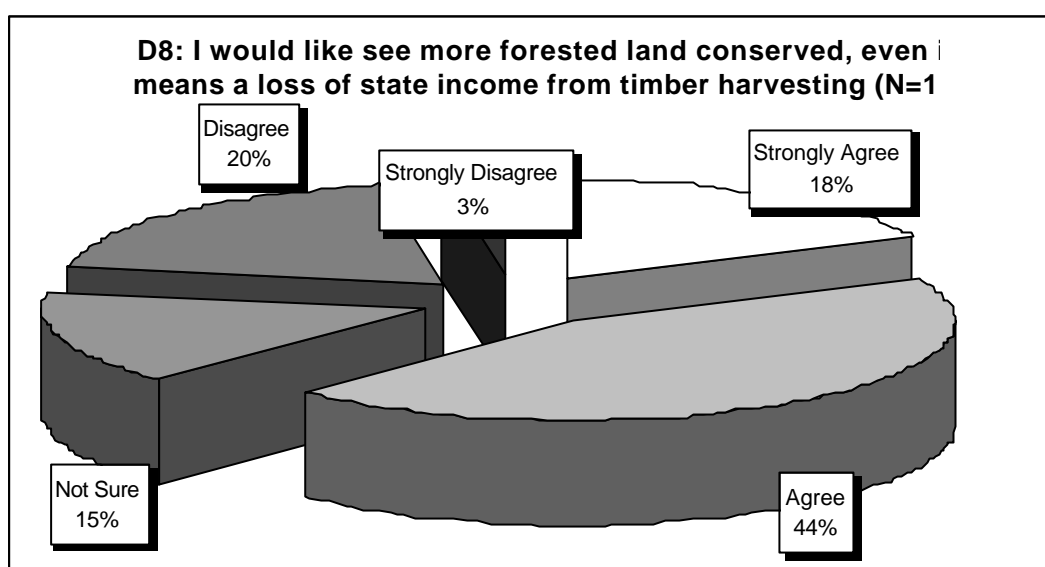


Table 24 and Figure 24 show that 62% of people agreed with the statement and 23% disagreed with the statement. This reflects the difficulties experienced by people and communities when conservation values and economic values come into conflict.

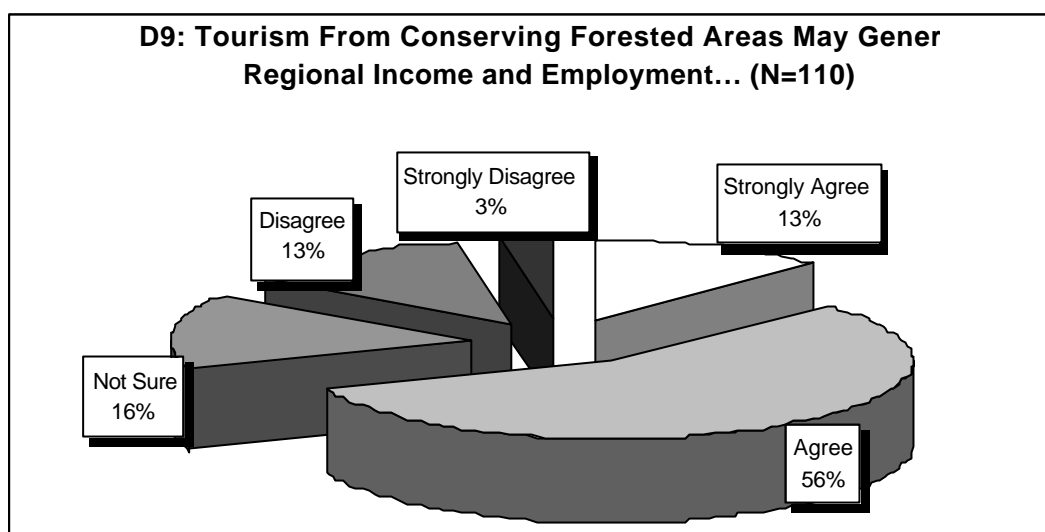
Table 24: I would like to see more forested land conserved even if it means a loss of income to the State from timber harvesting (N = 97)

	Frequency	Percentage
Strongly agree	20	18
Agree	49	44.1
Not sure	17	15.3
Disagree	22	19.8
Strongly disagree	3	2.7

Non-extractive economic uses of forested land

To reveal the extent to which people believe non-extractive economic uses of forested land can offset income and employment losses in extractive industries, respondents were asked to respond to the following statement, ‘*Tourism from conserving forested areas may be able to generate regional income and employment offsetting possible losses in the timber industry*’ (Figure 25 and table 25).

Figure 25



There is a strong positive response to the above statement with more than half (56%) of respondents agreeing with the statement and a further 13 per cent strongly agreeing with the statement. Close to 16 per cent of respondents were unsure and a further 16 per cent indicated that they disagreed with the statement.

Table 25: Tourism from conserving forested areas may be able to generate regional income and employment offsetting possible losses in the timber industry (N = 110)

	Frequency	Percentage
Strongly agree	14	12.7
Agree	62	56.4
Not sure	17	15.5
Disagree	14	12.7
Strongly disagree	3	2.7

Source of timber products

The figures represented in Figure 26 and table 26 indicate that a large percentage of respondents indicated they wish to have timber sourced from eucalypt plantations (38%), pine plantations (60%) and both (23%). No respondents indicated they wish to see timber products sourced from native forests.

Figure 26

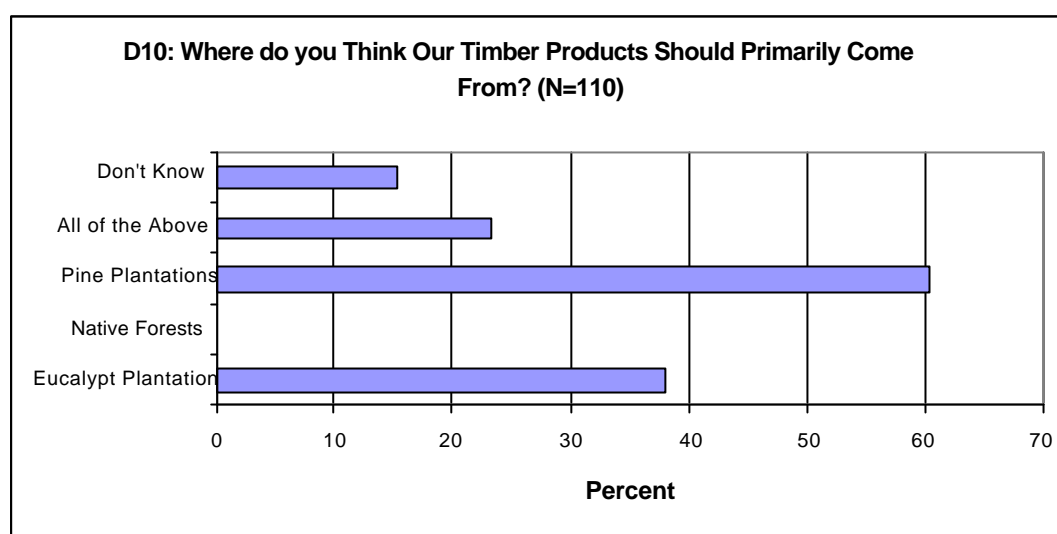


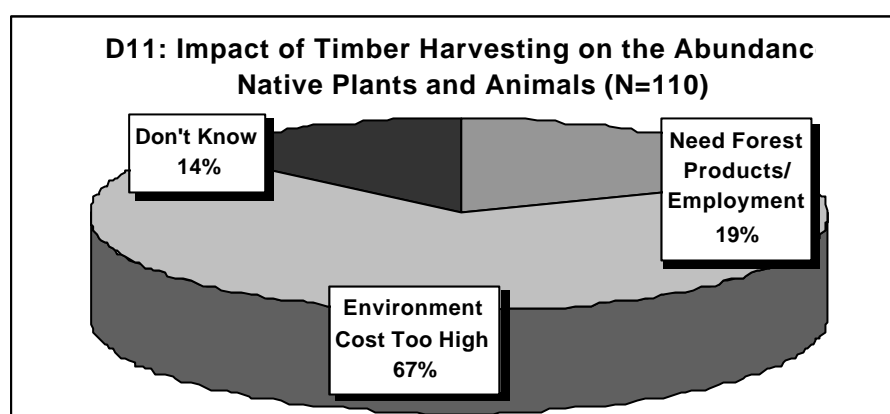
Table 26: Preferred source of timber products (N = 110)

	Frequency	Percentage
Eucalypt plantations	42	37.84
Native forests	–	–
Pine plantations	67	60.36
All of the above	26	23.42
Don't know	17	15.32

Economic and conservation uses of forests

In order to explore the potential scenario of a conflict between conservation and socioeconomic uses of forested land, participants were given a probable scenario and then given two options in order to clearly identify people's value orientations. The probable scenario was that timber harvesting in native forests may have an adverse impact on the abundance of native plants and animals. The options respondents had to choose from were limited in order to identify their value orientation between socioeconomic objectives (forestry products and employment) and environmental objectives (conservation and protection of native species).

Figure 27



The data presented in Figure 27 and table 27 indicate that most respondents (67%) valued conservation and the preservation of animal and plant species over economic objectives such as jobs and forestry products (19%).

Table 27: Timber harvesting in native forests may have an adverse impact on the abundance of native plants and animals (N = 97). If this is the case, do you think:

	Frequency	Percentage
This is unfortunate but we need forestry products and employment	21	19.1
The environmental costs are too high, it might be better to compromise on forestry activities	74	67.3
Don't know	15	13.6

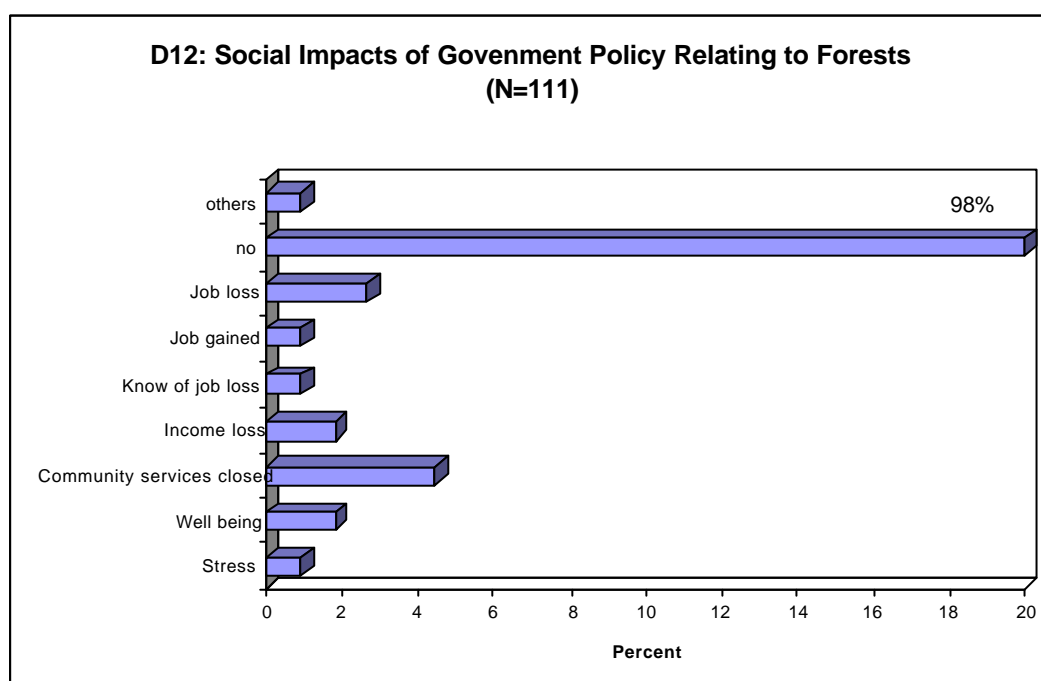
Social impact of forest policy

Participants were asked if they or their family had been directly affected in any way by government policy relating to forests in order to identify the social impact of forest policy and the geographical location of this impact. Table 28 gives the percentages and frequencies for this question. The data indicate that most respondents (92%) reported they had not been directly affected by government forest policy. However, 5% indicated that community services had closed due to government policy relating to forests, with a further 3% of respondents in the LNE CRA region reporting 'job loss' as one effect of forest policy.

Table 28: Have you or your family been directly affected in any way by government policy relating to forests, if so how? (N = 111)

	Frequency	Percentage
Stress	1	.9
Well being	2	1.8
Community services closed	5	4.5
Income loss	2	1.8
Know of job loss	1	0.9
Job gained	1	0.9
Job loss	3	2.7
no	102	91.89
others	1	.9

Figure 28



Social values of forested land

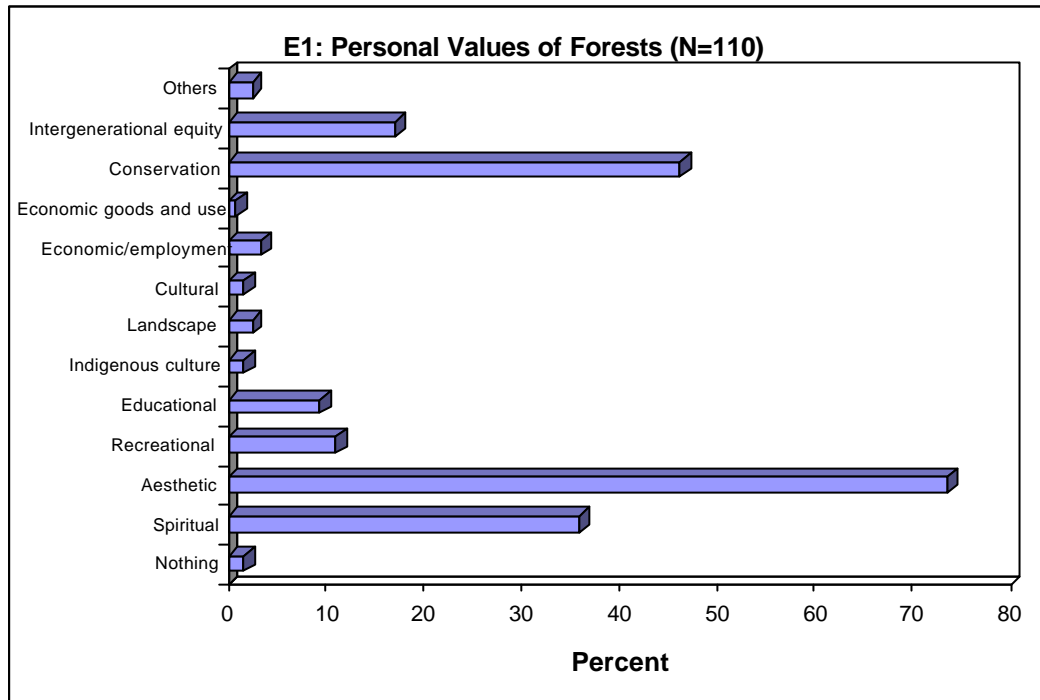
Introduction

This section was composed of five questions to further investigate how people value forested land.

Personal value of forests

To gain an understanding of what people value about forests at a personal level, people were asked ‘What is it about forests that you value?’. Figure 29 and table 29 display the responses to the question.

Figure 29



The results show that a high percentage of respondents (74%) indicated they valued the aesthetic qualities of forests highly. Respondents also indicated that the conservation qualities (46%) were highly valued as were spiritual qualities found in forests (36%). The next most frequent response was from people who wanted to sustain forests for future generations (17%) and for purposes of recreation (11%).

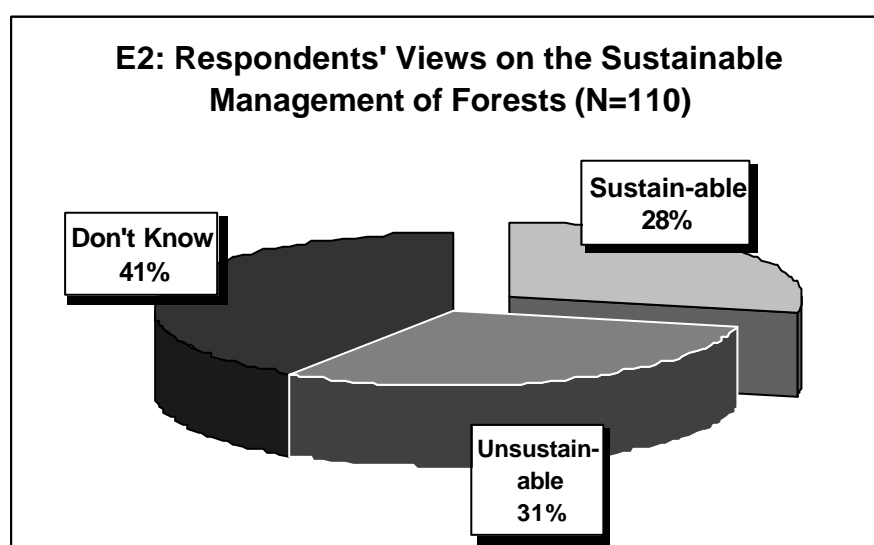
Table 29: Personal value of forests (N = 110)¹¹

	Frequency	Percentage
Nothing	2	1.71
Spiritual	42	35.9
Aesthetic	86	73.5
Recreational	13	11.11
Educational	11	9.4
Indigenous culture	2	1.71
Landscape	3	2.56
Cultural	2	1.71
Economic/employment	4	3.42
Economic goods and use	1	0.85
Conservation	54	46.15
Intergenerational equity	20	17.09
Others	3	2.56

Ecologically sustainable forest management

Ecologically sustainable management is a basic policy principle for forests in Australia. To test the public's perception and awareness of the term participants were asked if they thought current management of forested land is ecologically sustainable. Responses were fairly evenly broken down into three categories for this question, with a high percentage of respondents (41%) reporting they did not know.

Figure 30



¹¹ Spiritual – well being, peace and quiet, escape, faith in the world, good feelings. Aesthetic – beauty, space, experience nature. Recreational – exercise, sport, games. Educational – learn things about nature. Indigenous culture – understand / experience Aboriginal culture. Landscape – paint, take photographs. Cultural – socialise. Economic – employment. Economic goods and use – gathering firewood / seeds. Conservation – various conservation reasons. Intergenerational equity – sustain values for future generations.

Twenty eight per cent of the sample from LNE CRA region perceived current management of forested land to be ecologically sustainable, with 31% perceiving current forest management to be unsustainable, as outlined in table 30 and figure 30.

Table 30: Do you think current management of forested land is ecologically sustainable? (N = 110)

	Frequency	Percentage
Yes	31	28.2
No	34	30.9
Dot know	45	40.9

Issues of concern relating to forested land

Respondents were asked what issues regarding forested land they were specifically concerned about. Eighty-three per cent of the sample responded to this question with 17% not stating any particular concerns. Thirty-nine per cent of the entire sample reported they were concerned about logging and 28% reported they were concerned about woodchipping. The next most frequently recorded issues were 'loss of wilderness' (21%) and 'biodiversity loss' (15%) (figure 31 and table 31).

Environmental concerns constituted the most frequently cited responses, with socioeconomic concerns ranking much lower, although 5% of respondents indicated they were concerned about the issue of job security. The results indicate high environmental values invested by the sample group in forests.

Figure 31

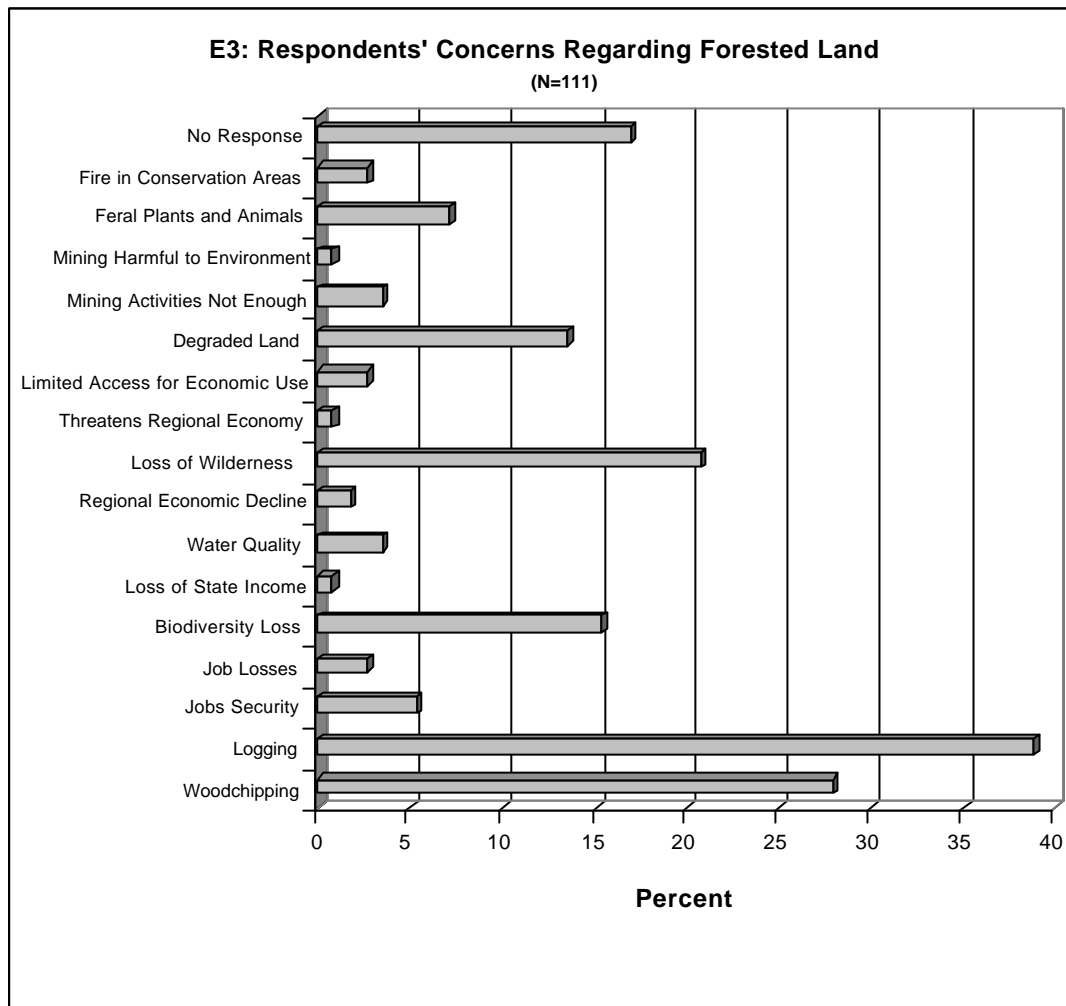


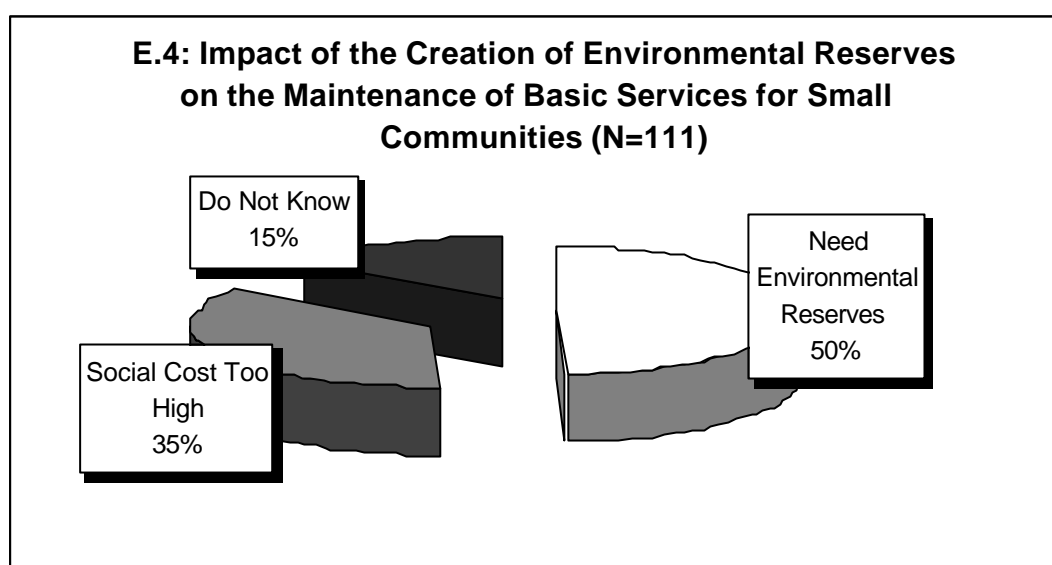
Table 31: Issues of concern regarding forested land (N = 111)

	Frequency	Percentage
Woodchipping	31	27.93
Logging	43	38.74
Job security	6	5.41
Job losses	3	2.7
Biodiversity loss	17	15.32
State income	1	0.9
Water quality	4	3.6
Regional economic decline	2	1.8
Loss of wilderness	23	20.72
Creation of wilderness area a threat to regional economy	1	0.9
Limited access to natural resources for economic uses	3	2.7
Degraded land	15	13.51
Mining activities environmentally harmful	4	3.6
Not enough mining activities	1	0.9
Feral plants and animals	8	7.21
Fire in conservation areas	3	2.7
Loss of grazing land	–	–
No response	19	17

Social and conservation values

This question explored people's responses to the potential scenario of a conflict between conservation and social values relating to the use of forested land. Survey participants were given a probable scenario and then given two options in order to clearly identify people's value orientations. The scenario was that forestry jobs may be lost to create environmental reserves, and this may then affect some small communities adversely by reducing their access to basic services (as the population may decline to a level that may lead to the closing of schools, health services etc.). The options respondents had to choose from were limited in order to identify their value orientation between social and community objectives (access to basic services) and environmental objectives (conservation and environmental reserves). The results are displayed in figure 32.

Figure 32



The figures in table 32 show that half the respondents (50%) felt that it was unfortunate for these communities but environmental reserves are needed, and 35% felt the social costs were too high. Fifteen per cent of people did not know which option to choose or did not understand the question.

Table 32: Forestry jobs may be lost to create new environmental reserves. This may then affect some small communities adversely, by reducing their access to basic services (N = 111). If this is the case do you think:

	Frequency	Percentage
Unfortunate for these communities but we need environmental reserves for the benefit of future generations	55	49.5
The social costs are too high, it may be better to compromise on creating environmental reserves than reduce people's access to basic services.	39	35.1
Don't know	17	15.3

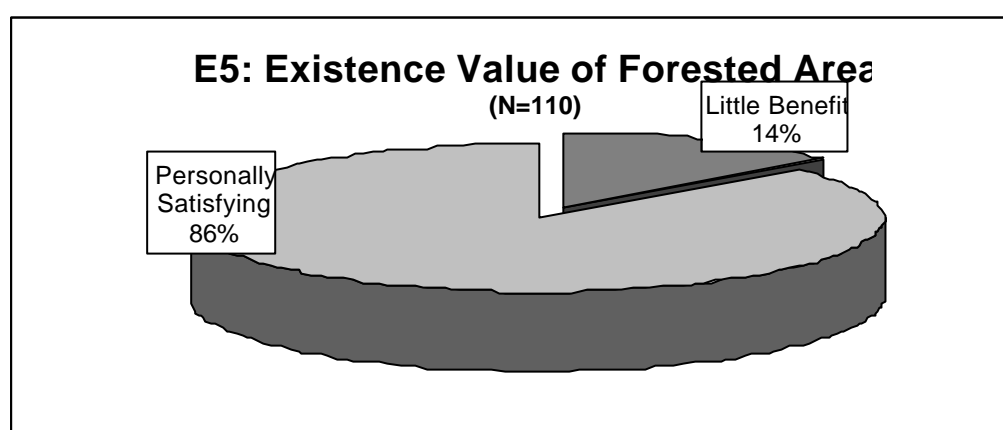
Existence value of forests

To explore respondents' attitude to the wilderness and existence values of forests in comparison to anthropocentric values the following question was asked of the survey participants: 'Some forested areas are rarely visited or used by people. Do you feel: a) there is little benefit in having forested land if humans can't use it for some type of recreational or economic activity; or b) it is personally satisfying to know that there is forested land that is 'untouched' by humans even if it is never used for recreational or economic activity?'

Table 33: Some forested areas are rarely visited or used by people (N = 110). Do you feel:

	Frequency	Percentage
there is little benefit in having forested land if humans can't use it for some type of recreational or economic activity.	15	13.6
it is personally satisfying to know that there is forested land that is 'untouched' by humans even if it is never used for recreational or economic activity	95	86.4

Figure 33



The results (figure 33, table 33) clearly show that people are in favour of wilderness areas that are not used for recreational or economic activities, with 86% of respondents indicating that it is personally satisfying to know there is forested land 'untouched' by humans.

Concluding comments

This report investigated the attitudes of people in the Lower North East CRA region towards forests and forest use. One hundred and eleven people were interviewed with a Statewide rejection rate (those who were actually contacted as opposed to unanswered) of approximately 70%. The attitudes of these people remain unknown, an unavoidable problem in any mass surveying methodology. The demographic profile of those who did respond showed a trend towards people employed in high socioeconomic positions and towards people who have received further education, when compared to profiles generated from 1991 census data. The effect of these trends upon people's attitudes is unknown and a source of debate, although it is possible that highly educated people, or those employed in occupations of high socioeconomic status, may have stronger environmental value systems than the general public.

Forest use

There was a large diversity within the sample regarding the amount of contact people had with forested land although most visited forested land less than once every two or three months (table 14). The high percentage of people who knew the difference between State forests and national parks (66%) did not indicate that they personally valued visiting one form of land tenure over another, being willing to pay similar amounts in vehicle access fees (table 16). The most popular uses of forested areas were recreational uses such as bushwalking, picnics,

camping and nature appreciation (figures 16, 17). Respondents indicated that recreational and conservation uses of forested land should be priorities for forest managers in all types of forests. Timber production was seen as a high priority for managers of State forests whilst other economic uses such as woodchipping, and paper production were not considered to be a high priority in either form of land tenure (tables 18, 19). There was considerable opposition to using forested land for hunting purposes. Using forested land to conserve Aboriginal sites of significance gained high support throughout the survey (D2g, D3e, D4).

Forest values

The strength of people's economic, social and environmental values were analysed at two scales. Firstly, at a non-specific macro-scale respondents thought economic priorities were of the same degree of importance as environmental priorities. As a general conclusion, social priorities were considered to be less important than economic and environmental considerations (figure 9). More specifically 'unemployment' and 'the environment' were the most frequently mentioned responses, followed by 'the health system' and 'education'. Still at a macro-scale but in a forestry-specific context, respondents put environmental principles (62%) before economic principles (23%) when an environment versus economic question was posed (figure 24). This swing towards environmental values reflects the high status forest issues possess in the structure of people's environmental concern (figure 12).

At a micro-scale, attitudes towards forests in terms of environmental, social and economic priorities was investigated again by looking at hypothetical micro-scale effects of broad policy decisions. When forestry products and employment were contrasted with the abundance of native plants and animals, most respondents opted for the environmental priority (figure 27). This shows that in this particular situation at a micro-scale, people value the biological communities of forests more than they value the economic benefits of forests. Consequently, respondents from the Lower North East CRA region displayed the most commensurate environmental value structures at both macro and micro-scales, when compared to the other key CRA regions (Eden, South and to a lesser extent UNE — see Reports 1, 2 and 4). When environmental values were contrasted with social values at a micro-scale, again most of the Lower North East sample put environmental principles first (figure 32). However, to infer from these value structures that the Lower North East sample would like to see an end to forestry activities, would be a simplistic and deterministic reading of the research findings. Moreover, the respondents from the LNE also recognised the importance of forestry activities to small communities. Nonetheless, of all the key CRA regions identified in the scope of this project, the Lower North East region displayed the most internally coherent environmental value structures, and a general prioritisation of recreational and conservation uses of forested land over other alternatives.

At a very personal level respondents indicated the main reason they valued forests was for aesthetic reasons (figure 29). They enjoyed the beauty, space and natural experiences forests provide. They also valued forests for conservation reasons, valuing the knowledge that forest ecosystems exist and are able to survive. The third most popular reason was spiritual — valuing forests for the way it made them 'feel'. The fourth most common value attributed to forests was intergenerational — valuing forests as an entity that can be enjoyed or used by future generations in equitable ways.

There were considerable differences and conflicts suggested within the sample, nonetheless the general trend was that environmental values ranked as high priorities at the macro-scale (alongside issues such as employment) and were commensurate with the micro-scale prioritisation of the environment within forest contexts. Forests have a very strong symbolic

environmental value that people want to preserve even if this is seen to cause local social and economic difficulties.

6 REVIEW OF FOREST INDUSTRY MITIGATION MEASURES

The overall project objective of the project was to provide baseline data for a longer-term longitudinal analysis of some of the social impacts of recent structural adjustment and mitigative processes in the Lower North East region of New South Wales.

The specific research objectives include the following:

- (a) to provide an analysis of the numbers of people who have accessed structural adjustment funds from January 1996 to July 1998, and to describe the current status of workers and business owners in the timber industry, including all those who have left the industry in the Lower North East regions between January 1996 and June 1998;
- (b) to provide a situation report on the quantum and nature of mitigative measures accessed by workers and businesses across each FISAP program area in the native hardwood industry in the Lower North East region;
- (c) to undertake case studies to understand the individual experiences both of the social impacts of recent structural change and of the mitigative measures that have been implemented in the native hardwood industry in the Lower North East region.

In the longer term the study will 'provide data for a longitudinal study and will assist in assessing the predicted social impacts in the RFA' against the outcomes of the study.

The results of this study are held by the New South Wales Department of Urban Affairs and Planning, Resource and Conservation Division, Sydney.

7 **LOCATIONAL IMPACTS OF FOREST-BASED INDUSTRY EXPENDITURE**

The project

As part of the social assessment of forest regions in New South Wales, the Social Assessment Unit (Forest Assessment Branch) of the Commonwealth Department of Primary Industries and Energy, together with the New South Wales Department of Urban Affairs and Planning as sponsors of the Social and Economic Technical Committee of the New South Wales Resource and Conservation Assessment Council, established a consultancy for a study of the locational impact of forest-based industry expenditure in the Lower North East forestry region of New South Wales.¹

The aim of the project was to assess the type and location of expenditure of forest-based industries and workers and the expenditure linkages and networks between forest-based industries and those industries which supply goods and services to them.

It is understood that the term ‘forest-based industries’ refers in particular to those industries based on native hardwood timber, in forests and plantations on Crown land and on private property. The present report describes the results of this study of locational impacts.

The approach adopted

The approach adopted in this project closely followed that employed by Rush Social Research in its investigations of the local impacts of forest industry expenditure in the Eden region. The detailed description of and rationale for the approach is described elsewhere.² Here it is appropriate to state that the overall study is carried out as a two step procedure:

- Step 1: involving a survey of timber mills and contractors and timber hauliers;
- Step 2: involving a survey of local suppliers to the timber mills, contractors and hauliers.

With regard to step 1, it is noted that the Lower North East region, relative to the Eden region, covers a very large area and includes very many more mills, contractors and hauliers. Consequently, face-to-face contact with all such businesses was not possible for the Lower North East. A sample of face-to-face interviews was supplemented by a mail-out survey of the remainder.

This section outlines the method used in the survey of timber mills, contractors and hauliers. Details of the responses and the consequences for the subsequent analysis are also discussed.

It then contains details of the analysis of the survey of mills, contractors and hauliers. The views of mill and contract company owners and managers, recorded in the series of face-to-face interviews, are set out in the pages following the heading ‘Response to the survey’.

The approach to and results from the survey of local suppliers to the timber industry are given under the heading ‘Local expenditures’.

¹ The full consultancy brief is attached at Appendix xxx.

² Rush Social Research, *Local Impacts of Forest Industry Expenditure in the Eden CRA*, a research report to SAU/DPIE and RACAC/DUAP, December 1997.

The population of mills and contractors in the Lower North East

The primary database on mills and contractors used for the Lower North East project, has been provided by NSW State Forests.

This database contains various information, with records essentially based on the administrative requirement of the issuance of licences to carry out forest activities such as milling. A number of mills have ongoing relations with NSW State Forests. These mills are often the larger ones with log quotas from Crown land native forests. However many licence holders have smaller operations, involving non-quota salvage timber operations, and involving harvesting from private property either partly or wholly. These operations may involve only part-time or ad hoc work: a mill licence holder may be a farmer with a stand of trees on his or her own property. For such licence holders, use of the licence may be a sometime affair.

The timber industry in the Lower North East is in constant flux at the present time. Businesses are closing, continuing with reduced staff, or amalgamating; and some are expanding. Businesses with valid licences may have wound up; amalgamated businesses may have changed names; staff numbers may have changed since the most recent industry survey. These changes make it difficult for any database operation to ensure that its records are completely up to date.

Following a process of updating and editing, the lists provided by State Forests for the Lower North East contained the names of about 130 mills and of 32 contractors. A further independent process of editing attempted to cross-check these lists, so that as far as possible they represented the current situation of mills and contractors in the Lower North East. Although a small number of businesses listed were found to have closed, neither list was substantially changed.

Elements of the survey

Face-to-face interviews

From the lists of mills and contractors available, a selection was made of 23 businesses for face-to-face interviews. These businesses were seen as important for the project in terms of location and size. The interviews with the 23 businesses involved a wide ranging qualitative discussion of the timber industry within the region and the businesses' experiences over the past few years. Following this, the participants were asked to respond to a semi-structured questionnaire which covered the key topics regarding locational impact. The questionnaire employed was developed by Rush Social Research and confirmed by the client.

In some cases the questionnaire was left on site, for later return to Rush Social Research. This enabled the questionnaire to be completed by the participant in his/her own time, since questions often covered data only available in annual reports or financial statements. The returned questionnaires were varyingly comprehensive in the information provided, and some were not returned at all.

The face-to-face interviews were conducted during the week of 10–14 August 1998 and those interviewed were:

- mill owners/managers — 18;
- contractors — 5;
- NSW State Forest regional representatives — 3.

Mail survey of remaining mills/contractors

The data collected and the comments from the businesses interviewed face-to-face focused attention on the content of a questionnaire that was to be mailed to all other known mills and contractors within the Lower North East. The content of this questionnaire was confirmed by the client. The mail survey was intended to provide a better geographical spread than was possible using the face-to-face method. Included in the mail-out was a return slip which could be used to indicate if that business had closed down.

With the larger mills who had not responded to the mail questionnaire, telephone calls were made from the Rush Social Research offices in Sydney reminding non-respondents of the questionnaire, and inviting their response and participation in the project. However, a poor response rate was achieved overall.

Response to the survey

Level of response

As at Friday 23 October, the number of useable questionnaire responses in hand was: 23 mills and six contractors. This represented 463 full-time, 10 part-time, and 23 casual employees. Comparing the responses to the State Forests' mills and contractors database, it is noted:

Table 1: Lower North East employment figures

	No. of mills/ contractors	Percentage of Lower North East ^a	Number employed ^b	Percentage of Lower North East ^a
Mills	23	18	437	45
Contractors	6	?	43	?

Notes:

^a Determined on the basis of State Forests database information

^b Part-time and casual employees are counted as half a full-time employee

Ten survey return slips were received indicating that these businesses had closed.

A number of respondents adopted very positive approaches to the present project and went out of their way to assist in its completion. Overall, however, there has been a lack of detailed response from both mills and contractors to the survey. This appears to have been due to several factors:

- respondents exercising their right not to participate;

and for those participating:

- choosing to provide only some of the information requested;
- being reluctant to provide financial information; and
- being reluctant to set aside the time necessary to complete the questionnaire.

Such limited responses were not restricted to any particular size of operation. Some possible reasons for respondents exercising these choices include:

- feeling that the information requested was their property and should not be disclosed;
- being sympathetic but feeling 'surveyed out';
- feeling anxiety over the future of their own business and being reluctant to disclose it;
- feeling cynical about the nature and purpose of the exercise, and its political context.

(All these reasons have been expressed to Rush Social Research researchers during the course of the project.)

Characteristics of respondents

The characteristics of the mills and contractor businesses which have provided useful questionnaires are as follows:

Table 2: Timber industry operations conducted by businesses in sample

	Respondents	
	Mills	Contractors
Total businesses	23	6
of which:		
buy logs	18	1
fell hardwood	10	5
fell softwood	1	0
snig/load/haul hardwood	12	5
snig/load/fell softwood	1	0
haul only (hardwood)	0	1
mill hardwood	20	n/a
mill softwood	2	n/a
and produce:		
hardwood sawlog products	10	
hardwood pulp log products	4	
softwood sawlog products	1	
softwood pulp log products	0	

Whereas it would be advantageous to identify log haulage as a separate category of business, this is not possible here as only one such business responded to the questionnaire and confidentiality precludes such identification. This log haulage company is therefore classified as a ‘contractor’ in the following analyses. If that company appears unique in any way, this fact will be mentioned.

The responding businesses were located in 19 different communities or centres widely distributed across the Lower North East region. No one centre predominated in the sample, two or three businesses being the maximum representation from any one community or centre.

Based on the evidence of the sample returns, larger mills (employing over 20 workers) obtain higher proportions of their timber (80% or more) from Crown lands. Some smaller mills also obtain high proportions from Crown land, but for those mills employing less than 20 people, there is a much higher likelihood that their timber resource will be derived in large measure from private property.

Approach adopted to the analysis

The low levels of response to the questionnaire have presented the need to adopt a very precise approach to the analysis of the data.

The problems posed relate in the main to the following:

- the precision with which the populations (of mills and contractors) are known;
- the small number of responses to the survey questionnaire;

- the variable nature of the responses written on to the questionnaires;
- the representativeness of the respondent sample to the State forest-identified population.

With regard to the knowledge of the mill and contractor populations, the best information available at the time has been employed. It has not been possible to check beforehand whether all the enumerated licensed mills are operating day-by-day, are currently quiescent, or have closed. Indeed, changes continue to happen on a monthly basis, if not weekly.

However with regard to larger mills, it is known if they are operating or closed, so there is an additional confidence that can be attached to statements about employment in comparison to the overall population of mills.

The list of contractors provided the identity of over 30 companies. This appears quite a significant number, but there must remain some doubt as to the number of firms — particularly smaller firms — operating in the Lower North East.

The small number of responses to the survey questionnaire need not constitute a problem provided conclusions drawn are not surrounded by spurious statistical significance. One matter that does need to be noted is whether the sample is biased. This issue needs to be considered on a case by case basis, in relation to the question that is being asked of the data. For example, whereas it might fairly be assumed that the returns are biased towards businesses that are operating vigorously relative to those on the point of closure, there would appear to be few grounds for an assumption of bias in relation to the distribution of journey to work for mill X relative to a mill Y.

The variable level of completion of the questionnaires introduces a similar issue. Data missing from one questionnaire can sometimes be interpolated using other questionnaires: thus making the first more useful. Consistency checks were also carried out across the data provided by different respondents, in order to identify anomalies and if possible resolve them with the company involved.

Non-representativeness of the sample in relation to mills can be overcome in large measure by transforming variables to measures ‘per employee’ rather than per mill, as the sample is much more representative of the former than the latter (the respondent sample representing 18% of mills, but 45% of employees: cf. section 2.3).

Another set of responses to low data quality can involve the following types of change:

- from exact numerical expression to probabilistic expression;
- from cardinal measures to ordinal measures;
- replacing numerical statements with grammatical statements.

We have used these in the following, where appropriate.

In approaching the task of analysis Rush Social Research has been conscious of the need to identify the local and regional consequences of change in the timber industry (in relation to issues such as ‘If A then B’). The generic method of analysis, such as in specifying variables as ‘per employee’, and calculating distributions over a number of mills, contributes specifically to this aim.

When a change ‘A’ is specified, the results of this project provide information to determine the outcomes ‘B’. The results themselves are not geographically referenced or locationally specified until the change ‘A’ is specified.

A note on units of measurement

Because the focus of the project is on locational effects, we have adopted the following conventions:

mill	A number of companies which mill timber have mills at a number of sites, sometimes with long distances between them. Because the focus of this study is on locational effects, the unit for 'mill' is taken to be the individual site in all cases where this is appropriate.
employment	This is chosen as the focal variable in descriptions of the scale of operations for both mills and contractors. It has the advantage of being well defined, relatively easily identified, and it allows comparisons to be made across all types of operation where financial information is not available. In this study, part time and casual employees are treated as half an equivalent full-time employee.
disaggregation of data	All data provided by respondents was made available on the basis of strict confidentiality. It has therefore been found necessary in some parts of this report, to aggregate data or circumscribe some statements, in order that the confidentiality of respondents be maintained. (This is the commonly adopted convention in such circumstances.)

The timber industry in Lower North East New South Wales

Industry structure

It is the timber mill and processing companies who hold licences to access hardwood timber from native forests, and it is they who pay royalties to the New South Wales government for that privilege. In the Lower North East, many mills retain their own (what are referred to as) 'contracting' functions, which include the felling of trees, and the snagging, stacking and hauling of the timber to their mill or mills. Other businesses use independent contracting companies to carry out these tasks. Some mills employ both means of bringing timber to their mills. Some independent contractors subcontract one or more of the 'contracting' functions they are responsible for. Some 'contractors' carry out log haulage operations only. (In this report, reference to contracting companies means independent contracting companies and their subcontractors.)

There is a great diversity in the hardwood timber industry in the Lower North East forest region, with timber mills and processors producing a range of products that include: bearers, building frames, decking, fencing, floorboards, girders, joists, laminated boards, marine decking, palings, pallets, panels, parquetry, plywood, posts, poles, skewers, sleepers, stairs, tool handles, veneers, and weatherboards.

Mills

Information made available from NSW State Forests suggests that in the Lower North East there are about 128 mill sites (122 businesses) currently operating, employing around 1000

individuals. The mill sites vary considerably in size, from large operations with over 80 employees, to those employing only one person. Twelve mill sites employ over 50% of the workforce, and 27 mill sites employ ten people or more. Over 50 mills are identified as employing one or two people only (cf. figure 1).

Many of the mill sites cluster around commercial centres. However even for those sites not so situated, the lines of economic activity draw them towards one centre or another. The locational distribution of mill sites around commercial centres, weighted in terms of employment, is shown in table 3.

In terms of employment, the Newcastle region is the main focus of the timber industry in the Lower North East, containing or drawing to it over one-fifth (22%) of timber mill and contractor activity in the Lower North East. Secondary focuses for the industry include Coffs Harbour, Kempsey, Walcha, Wauchope and Bulahdelah, which all represent significant centres of commercial activity for the timber industry in the Lower North East.

Figure 1: Cumulative percentages of employment over mills, Lower North East Region

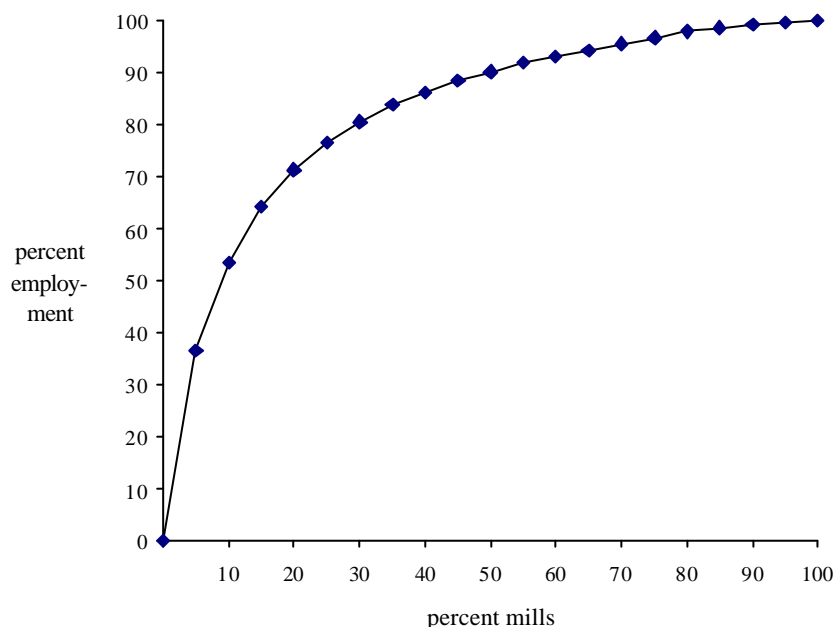


Table 3: Commercial centres of timber mill activity

Centre	Employment weight (%)	
	All mills	Large mills with 50% employment
Newcastle	22	27
Coffs Harbour	15	8
Kempsey	9	14
Walcha (1)	9	14
Wauchope	9	11
Bulahdelah	7	13
Macksville	6	
Gosford	6	6
Gloucester	4	7
Cessnock	3	
Taree	3	
Wingham	2	
Others	4	
Total	99	100

Note: Includes Armidale and Tamworth

Sources: NSW State Forests data, and this survey

Independent contractors

Although there are exceptions, independent contractors are generally small companies (in terms of employment, if not in terms of capital per employee), the operations of which are not focused at any one 'site' — least of all the place where the business has its office.

Depending on the way in which the company operates, a minimum sized team to carry out the felling, snigging and hauling operations would include 3–4 people working together. A haulage-only operation may comprise only one or two people.

It is not known accurately how many contracting firms are operating in the Lower North East, or the number of persons employed. Information available suggests that there may be about 40–45 companies based in the Lower North East, employing perhaps 180 workers, although this latter figure is liable to significant error.

Because these firms are mobile in their operations they can operate over wide areas: a number of companies from the Upper North East forest region also, no doubt, operate in the Lower North East (and vice versa). The location of 'head office' does not necessarily indicate the business's areas of forest operations.

Wages and salaries

Based on returns from 19 companies at 19 mill sites and employing over 360 full-time equivalent workers, the average annual wage for a mill company worker in the Lower North East in the financial year 1997–98 was approximately \$25 300. The range of annual wage at these sites was from about \$30 100 down to \$12 000. The sample results suggest that on average, the wage rates in smaller mills are somewhat less than in the larger mills, although in some cases this may indicate the part-time nature of work for some of the former.

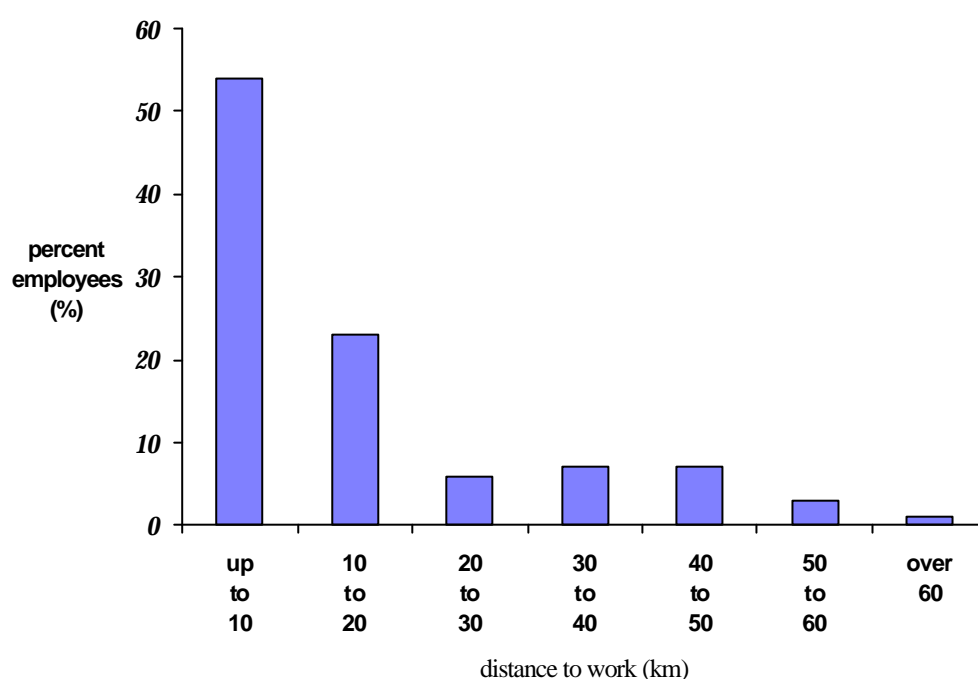
From the small sample of contractors providing wage data (four companies, over 30 employees), indications are that the average wage for contractor employees is about \$28 000

(range over individual companies \$31 000–\$15 000). (Haulage-only contracting appears to provide wage rates towards the lower end of this range.)

The journey to work

Nineteen mill companies provided information on employee domiciles that could be used to examine journey to work characteristics of timber industry workers. By combining the results for the nineteen mill sites (362 employees), we have derived a frequency distribution for all mill workers. In terms of percentages it is estimated that just over half of all mill employees (54%) live within ten kilometres travel of their place of work, a quarter (23%) live between 10 and 20 km from their work, and almost all workers live within 60 km (figure 2).

Figure 2: Journey to work (Lower North East mills)



On the evidence available, the median distance travelled by a worker to a mill is just less than 10 km.

In the case of contractors, and based on the sample of six businesses (42 employees), the picture that emerges is of domiciles of the working team closely clustered about the centre of operations of the business. For this small sample of relatively small contracting companies, almost all the workers (90%) live within 20 km of the business's main office; over three quarters (76%) live within ten kilometres.

Local expenditures

As part of the questionnaire, respondent mills were asked to make a calculation to identify the amount of money they spent locally in the year 1997–98. The details of the calculation are set out in the 'Business Services Expenditure' section of the questionnaire.

In essence this calculation commences with an estimation of total business outgoings (excluding wage-related outgoings) for the year, subtracts expenses on business services such

as insurances, registrations, loan and lease payments, log royalties, and major expenditures on capital equipment. These items are assumed not to be local expenditures. The remaining dollar amount is taken to represent expenditures on such items as:

- felling/snigging
- log haulage
- freight haulage
- fuel/oils
- gas
- tyres
- spare parts
- chain saws
- hardware
- mechanical equipment
- repairs and maintenance
- fabricated items
- electrical services
- engineering services
- other tradesmen
- accommodation
- accountancy services
- stores (stationery, packaging etc)

These items can potentially be purchased locally, and respondents were asked to estimate the percentage of the residue amount they did spend locally. The dollar amount resulting from this calculation is taken to be the amount spent locally by the mill (excluding wage payments to employees).³

Taking N as the full-time equivalent employment at a mill, D as the money in dollars spent locally, and assuming they are related in linear fashion, it is possible to estimate by least squares a regression line:

$$D = a + b.N \quad (a, b \text{ constants})$$

The data provided in the questionnaires by twelve mills of diverse sizes has allowed the calculation of such a regression. With D expressed in units of thousands of dollars, this line is:

$$D = -7.67 + 12.22N \quad n = 12 \quad R^2 = 0.74$$

$$(5.74) (2.32)$$

Statistical tests (t-test) indicate that b is significant at the 95 % level, and that the constant a is not significantly different from zero.

This provides a method for determining the amount of money entering or leaving the local economy as a result of changing employment levels in the local timber industry. The regression indicates that annual mill purchases from the local economy change by about \$12 220 for each worker taken on or made redundant (given present technology).

³ It is important to note that the local expenditure of a mill should be estimated net of expenditure on local independent contractors. If this provision is not made, estimates of expenditures locally by the timber industry will include an element of double counting. The same is true for the purchase of sawn boards from other mills.

In the case of contractors and hauliers, the limited data provided indicates that local expenditure per employee is about \$28 000 per employee. Over 50% of this figure on average is comprised of fuel purchases.

Industry change 1996–1998

There have been many changes in the timber industry in the Lower North East in recent years. The resource available from Crown forests has reduced substantially, increasing pressure on the private property resource. With the RFA process continuing, there is an air of uncertainty in the industry. Many companies, including some major mills, have closed their doors; others have downsized; some, however, have increased their turnover.

There have been consequential changes in employment across the region. Accurate figures are not available for company closures in recent years. NSW State Forests estimates suggest a net fall in the number of persons employed in the timber industry over the last three years, of about 400 persons. However the figure needs to be treated with circumspection owing to the possibilities in the State Forest records of duplications, the non-standard nature of licensing arrangements, and because it is not possible to discriminate between full-time and part-time employment.

All timber mills that responded to the survey questionnaire are currently operating, with only one exception. Fifteen respondents provided employment and wage figures for the three years 1995–96, 1996–97, 1997–98, and additional respondents provided employment figures only over the three years, or employment and wages figures for less than the three years. From the data provided by this sample of operating mills it is deduced that:

- in the 19 mills taken in total, employment has increased marginally (from 329 to 335 full-time equivalent employees). Six mills have shown employment increases, six have shown decreases, and for seven employment has remained at the same over the three years (table 4). Both small and large mills have shown employment gains and losses;
- over the 15–18 mills for which data was available, average annual wages have remained almost static over the three years, and are currently about \$25 330 per annum on average (table 5).

Table 4: Employment change at 19 mill sites across the Lower North East Region

Year	Employment			
	Full-time	Part-time	Casual	FTE
1995–96	315	9	19	329
1996–97	318	6	13	328
1997–98	323	7	16	335

Note: FTE = full-time equivalent employees

Table 5: Change in wages across Lower North East mills

Year	Sample		Av. annual wage (\$)
	Mills	Employees ^a	
1995–96	15	293	25 190
1996–97	18	374	25 090
1997–98	18	389	25 330

Notes:

^aemployees as FTE

For the sample of six contractors, overall employment has risen about 10 % over the years 1995–96 to 1997–98, although some companies have expanded and others contracted. For the four companies which provided wages data, it appears that wage levels have risen somewhat over the period (about 3%), and now stand at about \$28 000 on average. ‘Haul only’ contractors would appear to receive a significantly smaller wage than this figure.

FISAP–Industry Development Assistance grants

Under the NSW Forest Industry Structural Adjustment Package (FISAP), native timber sawmills, veneer and plywood mills, tool handle and pole manufacturers, sleeper cutters and logging and transport contractors may apply for Industry Development Assistance grants.⁴ Individual grants may range from a few tens of thousands of dollars to as much as one million dollars.

The successful applicant for a FISAP grant is enabled to raise further capital and invest in value-adding and/or productivity enhancing activities. These activities may (but do not necessarily) raise mill employment either directly through application of the grant monies, or indirectly through the grant’s flow-on effects. The implicit assumption in the government approval of a FISAP–Industry Development Assistance grant, of continuity of resource supply, may of itself raise the employment level at that mill.

The figures given above in relation to employment levels and wages need to be interpreted within the context of this program.

It is understood that over the period January 1996 to July 1998, FISAP– Industry Development Assistance grants to businesses in the Lower North East were as follows (table 6):

Table 6: FISAP Industry Development Assistance grants in the Lower North East

No. of applications approved	10
No. of businesses involved	9
Amount made available	\$2 865 818

Source: NSW Government data

The evidence available suggests that Industry Development Assistance grants have so far been directed to larger mills, particularly those deemed capable of significant value adding.

Donations to community

Many of the respondent mills and contractors contribute to the life of their local communities in ways other than with wage payments and local purchases. *‘It is important to put money back into the community’*, was the observation of one thoughtful manager.

Donations can be in cash or in kind — particularly in providing timber for community projects. Cash donations cover a broad spectrum, including monies to sports clubs (soccer, cricket, golf, netball, motorcycling, greyhound racing, rodeo), schools, churches, community groups and activities such as the Scouts, Rotary, the Salvation Army and Aboriginal training, and events and programs such as the A&H show, timber expo, ‘Crop a Cop’, and bush fire brigade.

⁴ Department of Land and Water Conservation, *FISAP - Help for You and your Industry* (Information Package), 1996.

Levels of optimism

As part of the questionnaire, respondents were asked: *How optimistic do you personally feel about your business's ability to adapt and adjust to major changes to industry (generally considered) in the Upper North East region?* Responses were recorded on a five-point scale, from 1 ('not at all optimistic') to 5 ('very optimistic'). Responses were as follows:

Table 7: Level of optimism for the business

	Scale	Mills	Contractors
not at all optimistic	1	5	1
	2	2	1
	3	3	1
	4	5	1
very optimistic	5	5	1
total		20	5

Amongst this sample of mills, the level of optimism was independent of mill size.

For some respondents optimism was rather forced, being accompanied by such comments as:

We have to be [optimistic] if we want to stay in business

and:

A lot of them haven't got a real good feeling.

One manager who chose not to answer this question expressed a common concern when he said:

It all depends on the RFA outcome.

Views of mills and contractors

During the week 10–14 August (and subsequently), face-to-face interviews were carried out with a number of mill managers/owners and contractors in the Lower North East. The following represents an overview and summary of the views expressed.

Overview

There are three main issues which stand out as a consequence of the face-to-face interviews:

- Different stakeholders interviewed have had **significantly different experiences** of recent changes in the timber industry in the Lower North East. For some, their position has improved. For others their position has deteriorated.
- The prime concern and anxiety of those interviewed is **resource security** (including volume availability and security of that volume), and the consequential matters of financial security and the capacity and will to invest.
- Amongst those interviewed, smaller operators often expressed a **sense of grievance** that there was discrimination between large and small mills in decisions being taken about their future.

Resource security

- In the current environment, the available hardwood timber resource from Crown land has been cut to 60% of what it was a few years ago. This reduction has been felt particularly by companies not having quota log contracts with State Forests. These are generally the smaller mills.
- There is a general sense that the average quality of resource (including quota logs) provided from State forests has declined in recent years. This is attributed to the government's volume commitments being larger than the forest areas currently available for logging can provide.
- In the situation of lack of resource security, or of total volumes available, the industry is turning to private property: either in harvesting more from this source, or in buying tracts of forested land as a hedge measure.
- Lack of a secure future has been reflected in the unwillingness of banks to provide loans to timber industry companies.

Firm size

- It was generally considered by medium and smaller firms, that the large firms were benefiting from Industry Development Assistance grants, to the disadvantage of the smaller ones. This observation is consistent with the view that it is generally the large firms who hold supply contracts with State Forests and can plan on that basis. As one interviewee asserted:

All the little fellas are being squeezed out

- A number of medium sized and smaller firms said they had 'looked at' Industry Development Assistance grant application and decided not to proceed in making an application. Issues in this regard included:
 - the need for companies themselves to put up investment funds but with no guarantee of resource security;
 - grants not being available to companies harvesting from private property/not having quota contracts for Crown land.
- One observation encountered was that for smaller mills, getting access to timber resource depended on 'who you know'.
- It was claimed that the log merchandising experiment on the Mid-North Coast region — which requires that those doing contracting work cannot supply Crown timber to their own mill — has made smaller mills reliant on the grace of contractors to the large mills for the resource they require. Buying logs through a contractor, it was also claimed, has increased their price.
- Smaller mills are usually more productive from the log than larger mills. Anecdotally, it was claimed that some large mills have recovery rates as low as 30%.
- There was concern expressed for the future of many smaller mills. These are often family companies with low overheads, efficient resource use, and low profit margins. Some may be able to continue in this manner into the future, if resource is available. However the

scale of investment required for producing finer specification timbers and higher value adding products, is likely to be beyond many of these mills.

Mill management and economy

- For many mills, the consistency of log supply is a problem. Despite quota allocations, these were not always being met ('arrears' in quota log provision could be up to several thousands of cubic metres, it was claimed).
- One mill owner identified a decline in mill skills available and the difficulty of finding workers for some skilled jobs.
- Some mills are finding it difficult to adjust to the current conditions because of the specificity of their milling equipment (such as the ability to handle different log sizes, accuracy of cut), and the cost of new equipment in an environment in which there is no resource security.
- Competition from alternative sources of some products — such as the use of concrete for telephone poles and railway sleepers, and of plastics for handles — was causing concern for some businesses.
- Some managers had put significant efforts into defending the industry with a consequent reduction in day-to-day management capability, and some businesses had been excluded from the debate because of this cost.

Value adding

- Several of the firms interviewed were actively moving towards value adding, particularly involving timber drying and dressing, but also developing other niche markets. Others would like to do this but were unsure as to how, given the current situation, they could achieve it.
- A number of comments were offered on value adding in the interviews:
 - mills using lower grade timbers have less opportunity for value adding;
 - inability to add value on the last 20% of log volume (fence posts, pallets etc.);
 - value-added product markets are more specific and more vulnerable to change.
- Some activities ancillary to value adding mentioned included the introduction of log grading courses for contractors, the use of AusIndustry diagnostic studies, and market research.
- One relatively small company has developed a new hardwood plantation harvesting head, now being sold in markets overseas.

Timber growing and timber quality

- Comments made included the following:
 - the region needs a chip mill to use timber waste;
 - State Forests has large tracts of unproductive land: these need to be put into plantations, and they need to buy such land if necessary;

- plantation hardwoods don't appear to be as good as natural regrowth for milling, as they are more springy and contain more knots;
- private landholders may be harvesting timber but not replacing it

Hardwood plantations must be made to work.

Attitudes and outlook

- There was an evident tiredness of what was seen as continual changes in the timber industry in recent years, in resource access and harvesting regulations:

We're sick of this continual change.

- There was amongst some businesses cynicism and distrust of government consultation processes, and an acute awareness of their political dimensions:

All these studies ... The politicians will end up doing what their politics dictates.

- Nonetheless, there was a degree of optimism expressed by some of those interviewed, although this was often forced:

We have to be if we want to stay in business.

- As was often clearly stated in these interviews, the key to the future is resource supply:

Future? We've got none. If they gave us a guarantee on supply, we could do something.

I updated my equipment in 1985 for about half a million dollars. I could spend double that now, but not without resource supply.

Timber industry supply

A significant part of the locational effects of change in the timber industry is the repercussions which such change would have on other industries and businesses in the locality. In this investigation, we have attempted to answer this question qualitatively and quantitatively.

Local supply to the timber industry

Basis of the approach

In the questionnaires completed by businesses in the timber industry (mills and contractors), and after the identification of the total of local business service expenditure (see section 3.4), respondents were asked to provide a list of local suppliers of products and services, identifying the product or service provided and an estimate of the amount of money spent with that supplier over the year 1997–98 (questionnaire: Q. 8).⁵

⁵ Note that this does not include wage payments to employees.

The responses to this question were extremely varied. A few respondents provided comprehensive and detailed lists of the creditors, including amounts paid. Others provided some back-of-the-envelope indications. Again, others believed that this information was properly not to be shared and declined to provide it.

From all the information provided, we have made estimates of which economic sectors have received what proportions of each dollar spent by a mill or contractor locally. In this regard, a few introductory words are necessary.

First, in interpreting the information provided, it is necessary to remove from the list of suppliers those who are themselves in the timber industry, such as contractors supplying these services to mills. If this is not done, there will be double counting. The correct estimate of extra-timber industry supply expenditures represented in these transactions will be reflected in expenditures of that contractor on his services.

Secondly, the nature of the products/services supplied have been classified using codes of the Australian and New Zealand Standard Industrial Classification.⁶ These codes have been combined in terms of categories which appear as important to the timber industry. The categories form one of the main bases for the analysis of the survey of suppliers themselves, detailed below.

Thirdly, it needs to be noted that the amounts paid to suppliers are identified for one year: 1997–98, and that this was a year of much change in the timber industry in the Lower North East. For some companies (including those who received Industry Development Assistance grants), this year was one of investment and increasing employment; for others this has been a year of stasis, and for others again a year of decline. Therefore it is not possible to give more than broad indications as to average values for amount spent.

Fourthly, it needs to be recalled that, as has been set out in the preceding section, we have made a particular set of assumptions about what monies are spent locally, and what monies can be considered as ‘lost’ to the locality and indeed the region.

Significant local inputs

From the data received, we have estimated the proportions of the ‘locally spent dollar’ which go from economic units in the timber industry in different directions into the local non-timber industry economy.

For small to medium sized mills, the two largest slices of the locally spend dollar go to freight haulage (products), and to petroleum product (fuels, oils) costs. In the former case this can be more than 50% of the local dollar, and in the latter, over 30%. Somewhat lesser slices go to parts, hardware and supplies such as bearing, wire ropes, saws and repairs to these; to repairs and maintenance of machinery and electrical equipment, and to motor vehicle repairs and spare parts, particularly tyres. For small to medium sized mills, these probably represent the significant total of local expenditures.

For the larger mills, all these categories of expenditure are significant, and other sets of identifiable expenditures include expenditure on an increased range of hardware products and services, retail expenditures (including motor vehicles, food, clothing), and business services (including accounting services, computer systems, advertising, and security services). Construction expenditures may also be a significant item in 1997–98.

⁶ Australian Bureau of Statistics and Department of Statistics (NZ), *Australian and New Zealand Standard Industrial Classification*, 1993 edition; see also idem, *Australian and New Zealand Standard Industrial Classification: Alphabetic Coding Index*, 1994.

In the case of contractors, local expenditures are similar to those of small and medium mills, with the difference that the contractors do not spend on haulage as the mills do, but spend proportionately more on vehicle and machinery repairs and maintenance, and in particular on tyres. More might also be spent on average, on petroleum fuels.

The following estimates are based on the responses of those companies who provided supplier lists together with money amounts. We have attempted to construct ‘average’ values from these figures. In doing so there is a need to take account not only of different sizes and functions of individual mills, but of the different accounting systems used by individual companies. We have employed a system of asterisks to identify allocation of the local dollar on a relative basis. These findings are summarised in table 8.

Table 8: Local expenditures of the timber industry: proportions of the dollar spent

Category	Timber industry businesses		
	Contractors	Small/medium Mills	Larger
Freight		****	****
Fuel/petroleum products	****	***	**
Hardware, ‘parts’	***	**	***
Machinery & electrical (repair & maintenance)	***	**	**
Motor vehicle repairs, tyres	**	*	*
Retail products & services			(*)
Business products & services			(*)
Construction		[]	[]

Note: For each type of timber industry business, the number of asterisks against a given category of goods and services indicates that category’s relative importance in each locally spent dollar. The columns are not comparable horizontally.

The use of asterisks confirms that the relative expenditures recorded are indicative only. We have compared the values deduced with those from timber industry businesses beyond the Lower North East, and the indications are similar. This is not surprising, first because of their generalised nature, and secondly because the allocations of expenditure are based on technology rather than location.

Timber industry dependent businesses

Approach taken

An important part of the questioning applied to mills and contractors was the request for a list of main suppliers. This list was given by some but not all participants in the face-to-face and telephone interviews. The importance of the list to the ‘cascade’ principle is that, when attempting to measure the flow-on effects of restricted access to hardwood, the local suppliers of goods to the timber industry are of prime concern.

The names and addresses of all suppliers named by the mills and contractors (Part III) were listed, and categorised by location (Upper North East / Lower North East). Once all replies from mills and contractors were collated, the sample of suppliers was supplemented by a random selection of similar industries from the yellow pages. In the Lower North East 129 addresses were provided by the mills and contractors, and to ensure a larger sample a further 330 names were drawn from the yellow pages. Postcodes and industry type ‘screeners’ ensured a) that the booster sample reflected the characteristics of the listed suppliers and b) that all were from within the locational scope of the research. Thus, while the sample consists

of businesses directly supplying the timber industry, it is not representative of all businesses within the Lower North East. The results from the survey of timber industry dependent businesses should be read keeping this in mind.

A low response rate was achieved by mail: in the event 11 questionnaires came back from suppliers whose businesses had closed with no forwarding address, three were returned with a note to say the survey was not applicable to them, seven came from timber industry businesses and have been omitted, 13 came back with very little in the way of useable data, and 20 have been included in the final sample.

Once the 'return by' date had passed, Rush Social Research then used the mail-out list to contact by telephone a sample of 104 businesses which had been nominated by the mills and contractors as being direct suppliers. Of these, 63 completed an interview by telephone and 43 chose to fax their returns to Rush Social Research. The sample discussed in this report therefore consists of 20 mail returns and 104 phone/fax interviews. Even collecting data on this more personal level has not overcome the reluctance of a number of suppliers to provide financial data.

The pre-coded questionnaire used to measure impact amongst timber industry related businesses was developed by Rush Social Research and confirmed by the Department of Primary Industries and Energy.

The sample of businesses supplying the timber industry

The respondent for the interview was generally the owner / manager / partner (69%); 14% were office managers, 10% were administrative personnel, and the remainder were business professionals (2%) or service/sales people (4%).

Ninety-three per cent of the 124 businesses in the final useable sample were local in that their head office was within the Lower North East of New South Wales. The businesses with head offices outside the area were in finance/insurance (three of nine), petrol/fuel (one of 17), auto repairs/tyres/service (one of 22) and property/business services (one of 15).

Responses came from twenty-six (26) townships, with more than half coming from four centres: Walcha, Port Macquarie, Taree and Wauchope (see table 9).

Table 9: Location of businesses in the sample

Centre/township	% of 124
Walcha	21
Port Macquarie	13
Taree	11
Wauchope	8
Kempsey	7
Wingham	6
Gloucester	5
Nambucca Heads	4
Tamworth	4
Dungog	3
Nabiac; Armidale: three returns each	5
Bellingen; Macksville; Frederickton; Cundletown; Toormina: two returns each	7

One return was received from each of the following townships: Kendell, Mt. George, Laurieton, Gum Scrub, Forester, Muswellbrook, Rutherford, Hyland Park, Mooreland.

Type of business

We have described the direction of timber industry 'locally spent dollar' in the Lower North East. Relative allocations of the dollars spent by mills and contractors have been identified and described (in table 8, above). The categories used in the analysis of the suppliers to the mills/contractors were extracted from the Australian and New Zealand Standard Industrial Classification tables (1993), and reflect these categories. The balance of interviews within the sample of 124 also favours some of these sectors, for instance the auto repairs/tyres/service, fuel/petroleum, business services, and machinery wholesaling. The allocation of each supplier to an appropriate category was undertaken with reference to table 8.

Table 10: Type of business

	% of sample
Auto repairs and service/tyres	17
Fuel suppliers	14
Business services	12
General retailing	12
Machinery and motor vehicle wholesaling	11
Machinery and equipment manufacturing	7
Financial services	7
Car retailing	6
Construction/trade services	4
Accommodation/food/community services	4
Road transport/storage/haulage	3
Auto electrical services	1

Of particular 'fit' between the suppliers and the hypothesis within table 8 is the prevalence of transport and machinery-related businesses. Auto repairs and services, fuel suppliers, tyres and machinery wholesaling are a significant proportion of the sample. 'Matching' the three asterisk status in table 8, machinery and equipment manufacturing is also represented in quite large numbers in the supplier sample: this includes parts manufacturing.

Of interest in the supplier sample is the comparatively high proportion of business services made up of legal and accounting services, computer services and real estate: this sector does not appear to be of consequence in table 8.

Employment of staff as at June 1997 and June 1998

June 1997

As of June 1997 less than one in five (18%) of the businesses had only one full-time staff member, with a further one in four (24%) having two full-time staff members. Twelve per cent did not disclose their staff numbers. Overall, the average (mean) number of full-time staff in the Lower North East was 4.8.

At the same time (June 1997), 80 of the 124 businesses had no part-time staff. Of the remaining 44, 16 had one part-timer and 15 had two.

One property/business services sector respondent claimed 52 part-timers, one in petrol/fuel claimed 20, two in the 'other businesses' sector claimed 16, and one (property/business services) claimed 12 part-time staff at year ending June 1997. There was an average of 4.9 part-time staff amongst those businesses employing part-timers.

The average number of casual staff at June 1997 was 3.8 amongst those employing casual staff at that date. Of the 45 businesses who had casual staff, 19 had one, nine had two, and nine had three casual staff. At the other end of the scale one had 22, one had 12 and one had eight casual staff.

June 1998

As at June 1998, changes had occurred in the average staff numbers, with a downturn in full-time staff numbers overall (-2% 1–10 full-time staff: -4% 11–25 full-time staff, -1% 26–50 full-time staff), and an increase in the numbers not recording full-time staff at all. There was also a decrease in the numbers of part-time staff (-5% 1–2 part-time staff, 1% 5–6 part-time staff, -2% 11 plus part-time staff).

The only growth was seen in casual staff numbers (businesses employing five or more casual staff), and this growth was negated by a drop in the number of businesses employing one to four casual staff. The following table shows staff number at end year-end June 1997 and June 1998 as well as the percentage change which has occurred.

Table 11: Comparison of employment numbers at year end June 1997 and June 1998

Full-time staff	% at June 1997	% at June 1998	% change
1–10 full-time staff	83	81	-2
11–25 full-time staff	8	4	-4
26–50 full-time staff	1	-	-1
<i>Average number of full-time staff</i>	<i>4.8</i>	<i>4.0</i>	<i>-0.8</i>
No information on full-time staff/None	8	15	+7
Part-time staff			
1–2 part-time staff	25	20	-5
3–4 part-time staff	2	2	nil
5–6 part-time staff	2	1	-1
7–10 part-time staff	2	2	nil
11–15 part-time staff	2	1	-1
16+ part-time staff	3	2	-1
<i>Average part-time staff amongst those who employ part-timers</i>	<i>4.9</i>	<i>3.8</i>	<i>-1.1</i>
Casual staff			
1–2 casual staff	22	21	-1
3–4 casual staff	9	7	-2
5 or more casual staff	5	6	+1
<i>Average casual staff amongst those who employ casuals</i>	<i>3.0</i>	<i>3.0</i>	<i>nil</i>

The slight changes downwards in the numbers of full-time staff appear to be in four sectors: manufacturing, wholesale machinery, petrol/fuel and transport/storage. In part-time staff, the downwards trend appears also in the wholesale sector, and in petrol/fuel and property/business services.

A total of 536 staff were list at June 1998 by the 97 businesses answering this question. The domicile of staff is shown against the domicile of the supplier companies, in table 12. As can be seen 57% of the staff are accounted for by the five towns most often represented in the sample of suppliers: Port Macquarie, Walcha, Kempsey, Taree and Wauchope.

Table 12: Location of staff employed by businesses in the sample

Centre/township	% of 120	% of 536 f-t staff
Walcha	21	11
Port Macquarie	13	22
Taree	11	7
Wauchope	8	7
Kempsey	7	10
Wingham	6	4
Gloucester	5	5
Nambucca Heads	4	5
Tamworth	4	5
Dungog	3	2
Nabiac, Armidale: three returns each	5	4
Bellingen, Macksville, Frederickton, Cundletown, Toormina: two returns each	7	2

Client base

In assessing the extent to which businesses supplying the timber industry could be at risk in the face of economic change in the area, the nature of the client base is important. Businesses with a wide client base could be seen to be less at risk than those with fewer clients. In the sample of businesses in the Lower North East, the majority (81%) had more than 50 customers last year, whilst only 2% had five or less. This is shown in table 13.

Table 13: Businesses' client base

Number of customers in last financial year	% of 120
A few (5 or less)	2
Several (6–10)	2
Quite a number (11–20)	1
A few dozen (21–50)	4
Many (more than 50)	81
No information	11

The number of clients was lowest in the following sectors: auto repairs/tyres/service, transport and storage, and property/business services.

Income details, 1996–97 and 1997–98

There was a relatively high refusal rate for questions relating to financial performance — income (46 of 120 businesses), and gross wages (52 of 120). Comparisons between gross income for the financial years ending June 30 1997 and June 30 1998, from those responding to the questions, are made in table 14.

As can be seen, the percentage of businesses in each gross income bracket changes only marginally and given the small sample size, no changes can be seen as significant. Perhaps what can be said is that the changes are complementary to some extent with (for example) a small increase in the number of businesses in the \$150 000 to \$200 000 gross income bracket being 'matched' by a small decrease in the numbers of businesses with gross income in the next highest bracket. If we inspect the higher end of gross income levels we see that there is similar complementarity, except for an apparent 3% growth in businesses where the income is between \$2.5 million and \$5 million. The median gross income remains the same at the

\$300 000 to \$500 000 level per year, for suppliers to the mills and contractors in the Lower North East.

Table 14: Changes in gross income over financial years 1996–97 and 1997–98

Gross income in \$ (n = 124 businesses)	% at 30 June 1997	% at 30 June 1998	% change
Less than 50 000	6	3	-3
+50 000–75 000	2	3	+1
+75 000–100 000	3	2	-1
+100 000–150 000	4	5	+1
+150 000–200 000	2	5	+3
+200 000–300 000	14	11	-3
+300 000–500 000	6	5	-1
+500 000–750 000	9	8	-1
+750 000–1 million	2	3	+1
+1–2.5 million	10	9	-1
+2.5–5 million	3	6	+3
+5–10 million	3	2	-1
<i>No response</i>	<i>36.3</i>	<i>37.1</i>	<i>+0.8</i>

The highest income figures for 1996–97 were recorded in the automotive sector with two of six auto retailers and two of six petrol/fuel businesses recording incomes of between \$5 million and \$7.5 million. Four businesses recorded incomes of between \$2.5 million and \$5 million (wholesale trade 1, transport/storage 1, property/business services 1, and ‘other’ sectors 1). Twelve businesses recorded incomes of between \$1 million and \$2.5 million and these were spread more generally across six sectors.

The thirteen businesses concentrated at the lower income levels (up to \$100 000) were recorded in the auto repairs/tyres/service (4), property/business (3), ‘other’ (3), and transport/storage, general retail, wholesale trade (1 business each sector).

In the year 1997–98, the relativity between the business sectors, in terms of income, had not changed significantly. Two petrol/fuel retailers had dropped one income bracket (from \$5–7.5 million to \$2.5–5 million) and in the manufacturing sector one business appears to have dropped downwards from \$2.5–5 million income to \$1–2.5 million.

The following table looks at changes in gross income for those sectors identified in table 8: when inspecting this table it must be remembered that the number of businesses in each sector is small. Little in the way of significant changes in income is observable.

Table 15: Changes in gross income for various sectors

Gross income (\$)	Wholesale machinery		Petrol/fuel		Auto repairs/tyres		Transport/storage		Business service	
	96-97	97-98	96-97	97-98	06-97	97-98	96-97	97-98	96-97	97-98
	n = 13 %	n = 13 %	n = 17 %	n = 17 %	n = 22 %	n = 22 %	n = 4 %	n = 4 %	n = 15 %	n = 15 %
Less than 50 000	8	8	—	—	5	5	25	—	20	13
+50 000–100 000	8	—	—	—	13	14	—	—	11	7
+100 000–200 000	—	8	6	6	5	14	22	25	7	7
+200 000–500 000	15	—	6	6	9	9	—	—	47	46
+500 000– 1 million	15	23	6	5	5	5	—	—	7	13
+1–2.5 million	23	23	6	5	9	9	25	25	—	—
+2.5–5 million	8	8	—	12	—	—	25	25	7	7
+5–7.5 million	—	—	12	10	—	—	—	—	—	—
No response	31	31	65	65	54	46	25	25	13	13

Percentage of sales (income) from five largest customers

An alternative measure of the risk of concentrating on a small client base is the percentage of total sales represented by the businesses' 'top five' customers. On average 34.9% of sales to businesses in the sample have made in this last financial year has been to their five largest customers in the Lower North East. The median figure is 30% of sales going to the five largest customers. The construction, transport and manufacturing sectors appear to concentrate more of their sales in the five top clients, than other sectors do.

Approximately 15% of customers place only 1–10% of sales with the top five clients:

- wholesale trade—8%
- retail (general)—13%
- finance/insurance—11%
- petrol/fuel—17%
- car retail—17%
- auto repair/tyres—18%

Percentage of sales (income) from timber industry

On average, 19% of sales during the last financial year went to the timber industry. This differs across the different industry sectors (although sample sizes are very small) to some extent, with an indication that in two sectors — transport/storage and construction — more than half of the respondent businesses rely on the timber industry for income. The wholesale machinery sector and general retail trade also rely relatively heavily on the timber industry for their sales, as is shown in the table following.

Table 16: Proportion of sales to top five and timber industry

Industry sector	Average % of sales going to top five customers	Average % of sales going to timber industry
Transport/storage	38	56
Construction	56	53
Wholesale trade	28	35
Retail trade (general)	40	23
Manufacturing	44	16
Petrol/fuel	42	15
Car retail	16	14
Auto repairs/tyres/service	33	10
Business services	25	8
Finance/insurance	35	5
All other	28	34
<i>Average over total sample</i>	<i>35</i>	<i>19</i>

Money going into the community

The questionnaire sought to establish the amount of money going out into the community from the suppliers in this sample, and thus a series of questions were asked about wages paid, capital outlays and the amount spent on other local suppliers.

Comparison of gross wages paid 1996–97 and 1997–98

The median gross wage bill has stayed the same across the two financial years at \$75 000–\$100 000. As with the gross income table, the gross wage table (following) shows very slight movements which appear to be complementary but generally show a very slight drift downwards of the gross wages bills incurred by the suppliers to the mills and contractors, between the two financial years.

Amongst those businesses returning gross wage information, the data shows two sectors as more likely to be experiencing lower gross wage bills: manufacturing and automotive retail.

Table 17: Changes in gross wage bills over financial years 1996–97 and 1997–98

Gross wages in \$ (n = 124 businesses)	% at 30 June 1997	% at 30 June 1998	% change
Less than 50 000	14	11	-3
+50 000–75 000	9	8	-1
+75 000–100 000	7	11	+4
+100 000–150 000	6	6	nil
+150 000–200 000	5	4	-1
+200 000–300 000	10	10	nil
+300 000–500 000	2	2	nil
+500 000–750 000	2	3	+1
+750 000–1 million	1	1	nil
+1–2.5 million	1	1	nil
+2.5–5 million	1	1	nil
No response	42	40	

Redundancy paid

In 1996–97, of the 124 respondents, two paid redundancies at less than \$50 000 and one paid a redundancy payment of between \$50 000 and \$75 000. One each of these redundancies occurred in the wholesale trade, business services, and ‘other’ sectors.

In the year 1997–98 five businesses paid redundancies, all at the ‘less than \$50 000’ level. These occurred within the following sectors: wholesale trade, general retail, automotive retail, property/business services, and ‘all other’.

Spending on business services and capital outlays

A set of questions measured expenses incurred by the businesses in the financial year ending 30 June 1998, in such areas as:

- insurances, vehicle registration and lease payments, payroll tax, workers compensation, superannuation payments, bank fees, power, rates, telephone and other similar expenses;
- major capital outlays;
- purchases from suppliers.

Spending on business services

Half (50%) of the 124 businesses refused to discuss their financial outgoings, but amongst those 62 businesses which did complete the question on outgoings on business services, just on six out of ten (59%) paid up to \$50 000: 27% spent much less at between \$1000 and \$20 000.

Table 18: Business services expenses 1997–98

Business expenses (\$) at 30 June 1998	n = 62 %	Total sample (124) %
1000–20 000	27	14
+20 000–50 000	32	16
+50 000–100 000	24	12
+100 000– 200 000	6	3
+200 000–300 000	6	3
+300 000–500 000	–	–
+500 000–1 million	3	2
No information		50

From the responses, the four sectors where business expenses are highest appear to be:

- property/business services — average \$101 114;
- ‘all other’ sector — average \$112 839;
- transport/storage — average \$204 000.

The sectors where average business expenses are lowest are:

- manufacturing — average \$38 400
- finance/insurance — average \$39 227
- petrol/fuel — average \$50 000

Major capital outlays

Ninety (90) of the 124 did not answer the question on major capital outlays, leaving a total of 34 businesses which did. The median spend on major capital outlays amongst these 34

businesses was \$20 000. Three businesses spent \$100 000–\$200 000 on major capital outlays and two spent over \$200 000.

The highest outlay on major capital expenditure was recorded by automotive retailers, general retail trade, auto repairs/types/service, and the category ‘all other’.

Table 19: Major capital outlays in the financial year 1997–98

Major capital outlays (in \$) at 30 June 1998	n = 35 %	Total sample (124) %
1000–10 000	34	10
+10 000–20 000	14	4
+20 000–50 000	14	4
+50 000–100 000	20	6
+100 000–200 000	11	3
+200 000 and over	6	2
No information	–	73

Amount spent on goods and services

Fifty-one per cent (51%) did not answer this question leaving a total of 61 businesses who estimated the amount they spent in the financial year ending 30 June 1998 on goods and services. Amongst those 61 businesses, the median spend on goods and services was \$50 000.

The grouped data is shown in the table following. As can be seen, 13% spent \$500 000 or more on suppliers and 3% spent over \$2 million: 13% spent between \$200 000 and half a million dollars. One in four (25%) were at the lowest end of the scale, spending between \$1000 and \$20 000, and 28% spent between \$20 000 and \$50 000.

Three sectors appeared to spend larger amounts on suppliers than others: these were the general retail trade (food, non-automotive retailing, average \$640 628), the wholesale trade (average \$286 768), and the construction sector (average \$244 125).

Table 20: Current spend on goods and services at 30 June 1998

Purchases from suppliers (in \$) at 30 June 1998	n = 61 %	Total sample (124) %
1000–20 000	25	12
+20 000–50 000	28	14
+50 000–100 000	16	8
+100 000–200 000	5	2
+200 000–300 000	5	2
+300 000–500 000	8	4
+500 000–2 million	10	5
+2 million	3	2
No information	n/a	51

Percentage of outgoing on goods and services spent locally

An average of 61% was spent locally by the 84 of the 124 businesses who answered this question. The median percentage figure was between 61 and 70%.

Eighteen businesses claimed that between 91 and 100% of their outgoings on suppliers was spent in the region; 13 claimed to spend between 81% and 90% locally. Three industry

sectors stood out in this result, petrol/fuel, finance/insurance and property/business services. All three have a low dependency on the timber industry.

Lowest spend within the regions was shown by the manufacturing and wholesale sectors, and auto retailing. Of these only the wholesale sector has a relatively high dependency on the timber industry. A high (65%: transport/storage) or relatively high (45%: construction) proportion of spending is done locally.

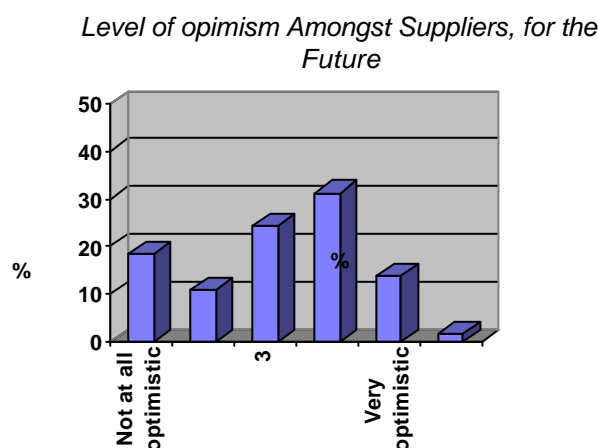
Table 21: Average of outlays spent locally and average sales to timber industry

Industry sector	Average % spent locally	Average sales going to timber industry
Finance/insurance	88	5
Petrol/fuel	78	15
Auto repairs/tyres/service	75	10
Property/business services	74	8
Transport/storage	65	56
General retail	56	23
Construction	45	53
Auto retail	45	14
Manufacturing	40	16
Wholesale trade	31	35

Level of optimism

All but two of the 124 businesses responded to this question, giving an indication of whether they felt ‘very optimistic’ about the future (+5) or ‘not at all optimistic (+1), or somewhere between these two extremes. On average a ‘score’ of 3.2 was achieved, indicating that the businesses barely tended towards the optimistic end of the scale.

Whilst one in three (33%) said they were optimistic (and 14% were very optimistic), one quarter of the ‘scores’ (26%) sat in the middle (see figure below).



The sub-group sample average level of optimism range from 2.8 to 4.3, although it is difficult to make judgements about this, given the small sub-group size. Auto repair/tyres/service was low at an average confidence level of 2.8; transport/storage (average 3.0) and manufacturing (average 3.1) were also low compared to finance/insurance and construction (each 3.6): property/business services (3.5), and car retail with a high 4.3 out of 5.

Key points around table 8

The following summary of trends which have been observed in the data from suppliers to the timber industry in part refers back to table 8, in that we describe the key points which relate to each sector described in table 8, and in the supplier data.

Table 8:		
Sector	no. of asterisks	Key trends in supplier survey
Transport/storage (compare to freight in table 21)	****	Relatively low income Higher % of income from low number of customers Higher dependency on timber industry (57% income) 65% spend is local
Construction	[]	Average level of confidence in future Higher % of sales to smaller number of clients Higher dependency on the timber industry (53% income) 45% of spend is local
Motor vehicle repairs/tyres/service	**	Optimistic about the future Lowest number of clients Slight drop in gross income 10% of sales to timber industry 75% spend is local
Fuel/petroleum	****	Lowest level of confidence 78% of spend is local High income Low dependence on 'top 5' 15% of sales to timber industry
Manufacturing (machinery & electrical)	***	Average level of confidence Higher % of income from a low base 16% of sales to the timber industry 40% of spend is local
Business services	(*)	Average level of confidence Higher % of sales to lower base 74% spend is local 8% of sales to timber industry Optimistic about the future

BACKGROUND

This document describes the development and use of a computer-based process for modelling the social impact of certain changes in the hardwood forest industry of New South Wales. The development came about because the New South Wales and Commonwealth Governments had entered into a process leading to a series of agreements—Regional Forest Agreements (RFA)— on the use and management of forested land in New South Wales. A New South Wales/Commonwealth RFA Steering Committee had responsibility for directing the RFA process in line with a scoping agreement that detail procedures, processes and timetable for developing the RFAs. The scoping agreement provided for Comprehensive Regional Assessments (CRA) of the environment, heritage, social and economic values of forested land.

For the purposes of the CRA/RFA process, the forested lands of NSW were delineated into forested regions. The areas under consideration in this report are the Upper North East (UNE) and Lower North East (LNE) of NSW.

A Social and Economic Technical Committee (SETC) was established to oversee social and economic assessments undertaken as part of the Comprehensive Regional Assessments. A Social Assessment Unit (SAU) was established within the Department of Primary Industries and Energy (DPIE), to provide a joint resource for the social assessment work. The role of the SAU was to consider the social impacts of forest land use options on communities within each region and to ensure that social data is an integral part of the RFA process.

OBJECTIVES AND SCOPE OF THE PROJECT

A Consultancy Brief set out the objectives of project and the scope of the tasks reported in this document. In brief, the main objectives were, in collaboration with the SAU and the SETC:

- To design and/or recommend a computer based, social impact model which is transparent, flexible and informs both government and community stakeholders of social impacts at the community level in an iterative decision making process;
- To analyse social data collected (by the SAU) in projects for use in the model;
- To model social data for the purposes of integration and advice on land use options, investigating the feasibility of the integration platform and GIS linkages. The specification of the integration platform will be confirmed at a later date by the Steering Committee;
- To model anticipated social impacts of land use options on communities in the study regions;
- To prepare, in collaboration with the Social Assessment Unit, social implications advice following an iterative options development phase.

THE ROLE OF SOCIAL IMPACT MODELLING

Social Impact is a term used to describe the interaction between the economic and policy worlds of firms, organisations and governments and the psychological and sociological experiences of the people who live in those worlds. Social impacts are relative things. People can be as disrupted by positive changes in their lives as they can by negative events. However, discussions of social impact tends to be focused most often on the experiences that occur as a consequence of negative events such as undesired changes in employment, shortage of resources or natural disasters, than on experiences from positive events.

Social Impacts are *felt* by the people to whom they happen. They can be felt as uncertainty, stress, anger, a sense of losing personal control over life and despair. These feelings can build up or be ameliorated over time. They impact in turn on the ways in which individuals behave and whole communities thrive or decline.

A major goal in social assessment is to identify and measure indicators that point to the kinds of feelings present in a community and, where possible, to model the likely rise and falls in these feelings and the implications for the community. Modelling is used in this context as a form of forecasting.

Ideally, the modelling process uses available *empirical evidence to describe the relationships* between economic and/or physical events and the subsequent individual or community sentiment. Where empirical data are not available, assumptions derived from broader social research have to be made about the nature of the relationships.

The aim of modelling is to provide as accurate a picture as possible of the ways factors such as individual satisfaction or overall community morale will vary over time under the impact of relevant economic or policy changes. Models are necessarily a simplification of reality but they can have a high level of validity if the salient features of reality have been carefully identified and incorporated into the model. A model may be simple but it may still play a useful role by allowing valid comparisons between cases. Even if a model is not able to forecast a variable of interest with *absolute accuracy*, it may still provide fruitful comparisons between communities because *the relative forecasts* are valid.

The strength of the modelling approach is that it focuses on identifying causal links rather than simply building a catalogue of possibly unrelated indicators to represent what is happening in a community. In practice, some mix of modelling and catalogue building is used because it is not always easy to identify the causal links between easily observed indicators such as the kinds of services available in a town and powerful but invisible concepts such as “community resilience”.

OUR APPROACH TO THE MODELLING PROCESS

The first step in modelling social impacts on forest communities was the collection of information about the people living in and around the communities under consideration. As part of this process, a number of surveys were conducted to collect detailed biographical data about people employed in forest related industries. In addition, surveys and community workshops were used to collect information about the ways in which people perceived their communities and the relationship of the communities to the forests.

IDENTIFICATION AND DEVELOPMENT OF SOCIAL INDICATORS

The data collected from these processes provided the basis for a number of social indicators. These indicators were constructed from one or more specific items of data to provide measures that reflected in a more holistic way aspects of each community or each individual. For example, while the length of time a person has been employed in a particular industry probably influences their ability to change to another kind of industry, this single factor of itself does not provide a clear picture of the flexibility or lack of flexibility the person may feel or experience.

While the surveys and workshops provided a large amount of information about people in the communities and the communities themselves, we sought to identify the smallest possible set of indicators that might best reflect the impact of changes in the hardwood industry on communities. We were guided in this search by referring to the social impact literature, past industry studies and, in particular, the psychological literature dealing with the links between life events and subsequent physical and mental wellbeing. 'Social impact' is not a simple outcome that can be represented by a single number or indicator. Rather, a number of indicators provide a profile or 'signature' for a community and this profile suggests how sensitive a community might be to the effects of change.

FORECASTING THE IMPACT OVER TIME

The process of modelling social impact does not require intensive computation, hence the mathematical parts of the process could easily be carried out within the limits of a spreadsheet such as Microsoft's Excel. However, spreadsheets have the major disadvantage that the logic involved in reaching the results of calculations is hard to make visible in a way that onlookers can assess quickly and easily. This problem becomes particularly severe when what is being modelled is a dynamic system—a system with interconnections allowing feedback (or feedforward) loops. As one of the objectives for the consultancy was to develop a computer-based forecasting process that was 'transparent' in that the assumptions and logic are easily examined, we opted not to use a spreadsheet for the project. For a similar reason we chose not to write our own software or to use any of the commonly available statistical or mathematical packages for the task.

We chose *Ithink* produced by High Performance Systems Inc as the most appropriate software for the project. *Ithink* has a heritage in organisational, ecological, environmental and management modelling work associated with people like Jay Forrester from the Sloan School of Management at MIT. *Ithink* has been used by climate modelling groups around the world as well as for economic, industrial and human resource planning and financial modelling. Prior to this project we had used the package in a number of areas including financial modelling in the banking industry and visitor forecasting in the tourism industry. *Ithink* uses a graphical interface to show the logic of the model and hence, assist with model building and interpretation. Thus, meeting one of the project objectives.

The goal when using Ithink is to identify the key 'flows' in a system and then model those flows over time by identifying the factors that control them. The modelling process is one of isolating the essential elements of a situation and then mirroring these in the software so that the impact of changes in key factors can be explored by simulating the system being studied. This approach can work with both 'hard' and soft' variables.

The output from Ithink can be presented in a number of ways: tables, graphs and 'indicators'. The 'indicators' are part of the graphic interface and can be chosen from a built-in palette of dials and annunciators to create the most useful 'control panel' for a specific situation. The tables and graphs can be exported through 'hot links' to other software capable of sharing data in this way, such as most recent releases of spreadsheet, database and graphics software.

DEVELOPING THE INDICATORS

We argued in developing the social impact model described in this report that the major relevant trigger for impacts would be changes in the employment levels in a community. These changes we saw as being (i) in the hardwood industry and (ii) in all other sectors of employment. Changes might come about, we suggested, from either job losses—a decline in the number of jobs within the industry in particular or community in general or through job creation.

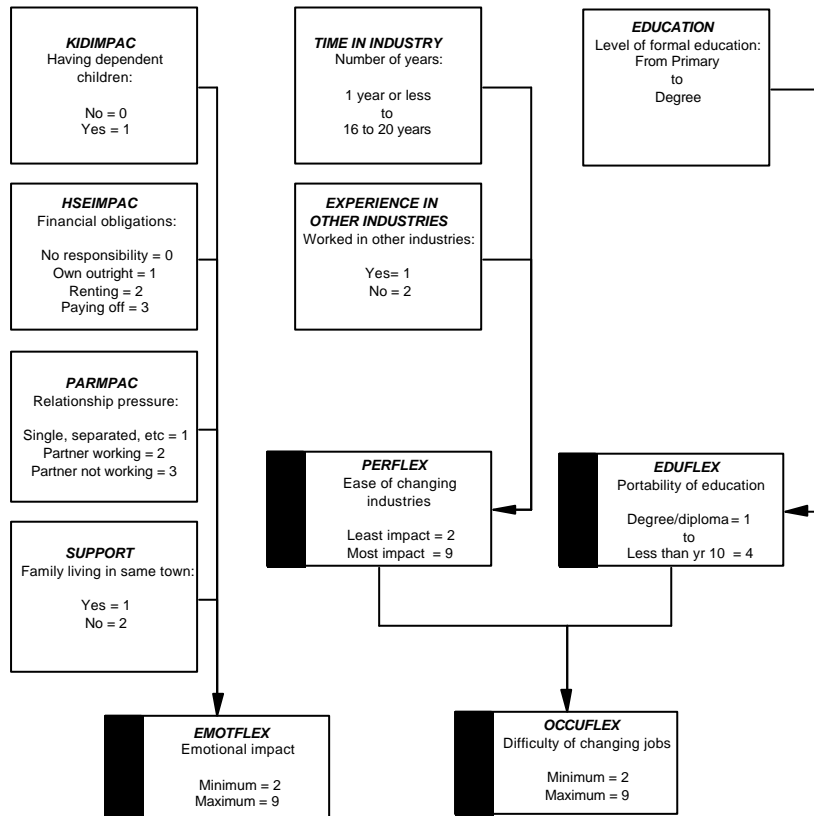
Two categories of indicators were developed for the project. The first to capture the impact of changed employment opportunities on people working in the hardwood industry, and the second to capture the impact of these changes on the broader community. The components of these indicators are outlined in the table on the following pages.

OUTLINE OF INDICATORS DEVELOPED TO REFLECT IMPACTS ON WORKERS IN THE HARDWOOD INDUSTRY

CONCEPT	INDICATORS	MEASURED COMPONENTS	ROLE IN MODEL
<p>Impact on Hardwood Workforce</p> <p>The ability of employees to change occupation or move to new locations in search of work</p>	Domestic Flexibility	<ul style="list-style-type: none"> ▪ Having dependent children. ▪ Extent of being locked into mortgage payments. ▪ Having a dependent partner. ▪ Having family members in the same town. 	<p>Values based on survey data are calculated for each worker. (Mean values were then calculated for the group of workers within each community).</p>
	Occupational Flexibility	<ul style="list-style-type: none"> ▪ Time in the timber industry. ▪ Experience in other industries. ▪ Level of education. 	<p>The impact appears when the jobs are lost and conditions improve slowly over time or more rapidly if jobs are created that can absorb unemployed workers. The rate of improvement is related to a number of factors including the available job pool and community resilience.</p>
	Community response	<ul style="list-style-type: none"> ▪ Ways in which a community has dealt with positive and negative impacts in the relatively recent past. 	<p>The impact of job losses on hardwood workers is assumed to be less if the community is more resilient and has a history of coping well with both positive and negative events.</p>

The individual components for the indicators were combined to produce single measures. There were three categories of indicator assumed to apply to each person—one that captured the personal or “emotional” impact of a job loss; one that captured the impact of time in the industry on ability to find jobs outside the industry and one that reflected the role of formal educational qualifications on finding a job outside the industry. The latter two indicators were combined into a measure of “occupational flexibility”. The way in which the components were combined is set out in the diagram on the following page.

Social Indicator Structure: Impact on Workers



Note: The indicator names shown in italics are the names created in SPSS when analysing the survey data collected from workers in the hardwood industry. SPSS is limited to eight character names for variables, resulting in unfortunately cryptic labels.

ASSUMPTIONS ABOUT THE INDICATORS FOR WORKERS

1. People who have lost their job cannot necessarily move into vacancies that are created; particularly when the jobs are created in other industry sectors.
2. The longer a person has worked in an industry, the harder it is to change industries. The change is less difficult if the person has had experience in other industries.
3. The greater the level of formal education, the easier it is for a person to change industries or jobs.
4. If a person has a mortgage, the impact of losing their job is greater than if they do not. Similarly, it is easier to move if a house is owned outright than if it is being rented.
5. If a person has dependent children the impact of losing their job is greater than if they do not.
6. If a person has a partner not in the workforce, the impact of losing their job is greater than if the partner is employed.
7. If a person does not have other family members living in a community, the impact of losing their job is greater than if they have family members in the community.

The indicator values were summed such that the greater the total, the greater the difficulty a person might have in changing jobs.

OUTLINE OF INDICATORS DEVELOPED TO REFLECT IMPACTS ON COMMUNITIES

CONCEPT	INDICATORS	MEASURED COMPONENTS	ROLE IN MODEL
<p>Impact on a Community</p> <p>The degree to which the impact of job losses can be dealt with by a community</p>	<p>Assessed response to previous impacts</p> <p>Relative impact of job losses</p>	<ul style="list-style-type: none"> ▪ Previous history of impacts. ▪ Jobs losses relative to the size of the community workforce. ▪ Job gains relative to the size of the workforce. ▪ Proportion of new jobs that can be substituted for timber jobs lost. <p>The aggregate level of impact within a community is the mean flexibility of hardwood workers in the community (see previous table) multiplied by the number of jobs lost.</p>	<p>Case histories of the ways in which a community has dealt with previous impacts were identified through community assessment workshops and published documents. The SAU officers assessed the case histories for the degree to which they reflected a robust and coordinated community response.</p> <ul style="list-style-type: none"> ▪ An interval scale was developed to reflect the quality of community response based reported reactions to past changes. ▪ It was assumed that negative impacts would decay over time. ▪ A moving value for cumulative impact was calculated by adding the impact at time 't' to half the value at time 't-1'. In this way each community is given an historic accumulated impact when the simulation begins.

ASSUMPTIONS ABOUT THE INDICATORS FOR COMMUNITIES

1. Impacts are cumulative over time and industry sectors. For example, the closure of a butter factory and the closure of a major retail outlet can combine to result in a greater impact than either event alone.
2. The intensity of an impact—positive or negative—declines over time.
3. The impact of losing job opportunities within a community is greater when the initial pool of job opportunities is smaller.
4. The impact of losing job opportunities within a community will be greater if people who are unemployed are less well equipped to seek employment or create jobs for themselves.
5. The impact of rising unemployment on a community will be less if the members of the community are experienced in working together to deal effectively with events that dislocate the routine pattern of life.
6. It is easier for a community to deal with positive events than with negative events

DEVELOPING THE SIMULATION MODEL FOR FORECASTING

The focus of this work is modelling *social* impact. This means that the system to be represented by the model is some aspect of the social life in the towns and townships that form the forest communities in the regions. Thus, the social impact model is in one sense the complement of the ecological models dealing with forest flora and fauna.

To keep the complexity of the model to a minimum, a single logic was developed for the model and then cloned for each of the communities involved in the study. This meant that while the actual values of variables and parameters for each community were specific to that community, the *underlying logic* of assessing the social impact was the same for all communities.

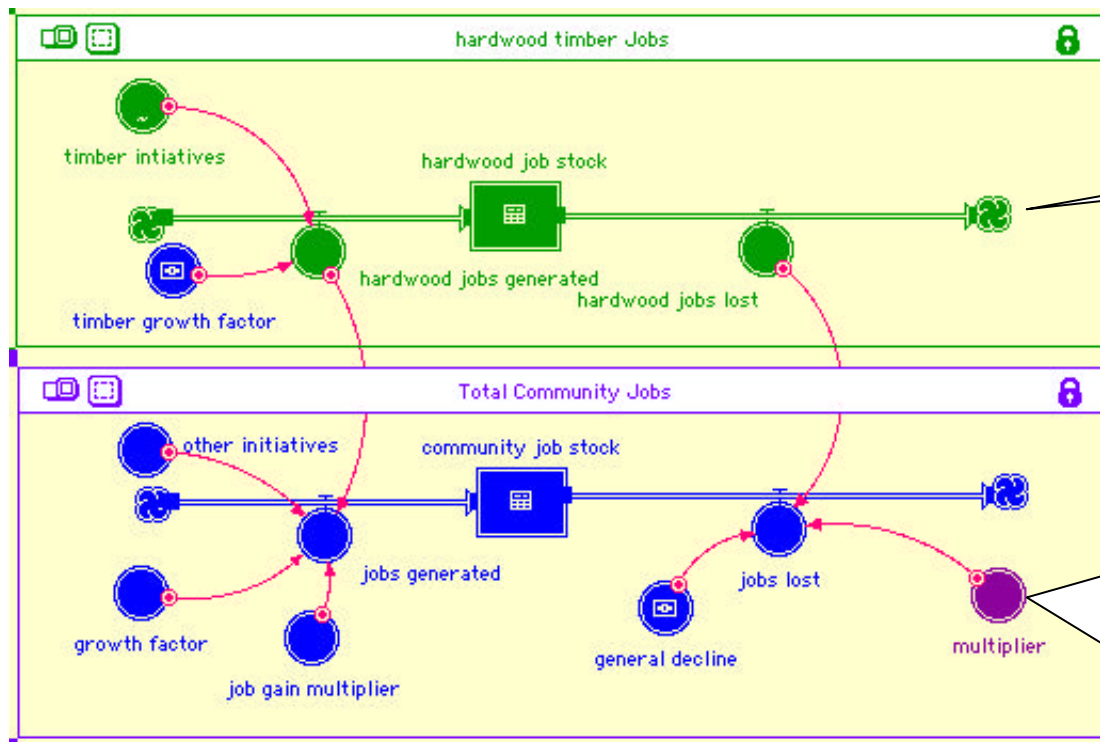
A starting point for developing system models is to identify the most relevant “flows” in the system being studied and then to identify the factors that either vary those flows or are consequences of changes in the flow. In the present case, jobs were identified as the most important things that vary. If we stay with the “plumbing” metaphor conjured up by the term flow, the number of available jobs at a given time can be thought of as the “pool” or stock of jobs. If employment opportunities decrease in a community, jobs can be thought of as draining away from a reservoir holding the total stock of jobs. Conversely, if employment opportunities increase, jobs can be thought of as flowing into the reservoir and increasing the general stock. Hence, the base flow for the social impact model was seen as the number of jobs in the hardwood industry. The link between jobs and communities was the place of residence of each person holding a job in the industry. For example, community A may have x contractors, y haulers, z bush crew and a mill worker.

At the beginning of a simulation run with the model each community has both the number of individuals employed in the hardwood industry, and the number of individuals employed in the community overall, allocated to it as part of the input. The simulation then removes or adds jobs that change as a consequence of policy decisions and as a consequence of an extrapolated historic increase or decrease in community jobs. The impacts of these changes are then assessed in terms of the social impact on the employees in the hardwood industry and the overall community.

In the model described here there are two kinds of information included in the profile. One is based on what in the modelling terminology are called ‘co-flows’ and these vary over time as part of the simulation. The co-flow used in this model is the total stock of jobs in the community. The co-flow also provides the means for including some kinds of mitigation factors in the model—such as the growth in jobs because of developments in other industries. These flows are shown in the diagram on the following page.

FLows REPRESENTED IN THE ITHINK GRAPHIC INTERFACE

The rectangles labelled “hardwood job stock” and “community job stock” represent the number of jobs available at any given time. The circles in the diagram represent factors that control the creation or loss of jobs. Some, like “timber growth factor” are historical estimates of changes in the industry. In contrast, other circles such as “timber initiatives” provide a means for including interventions that might occur at a particular point in time. The intervention can come about



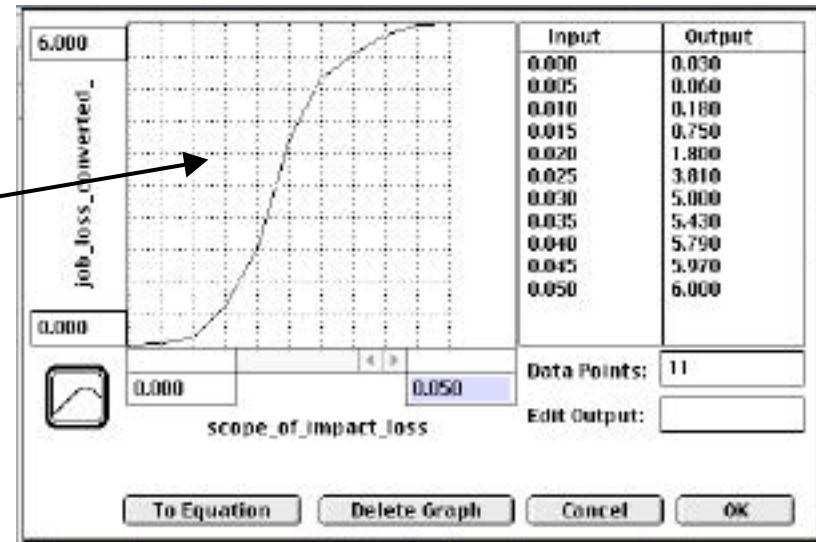
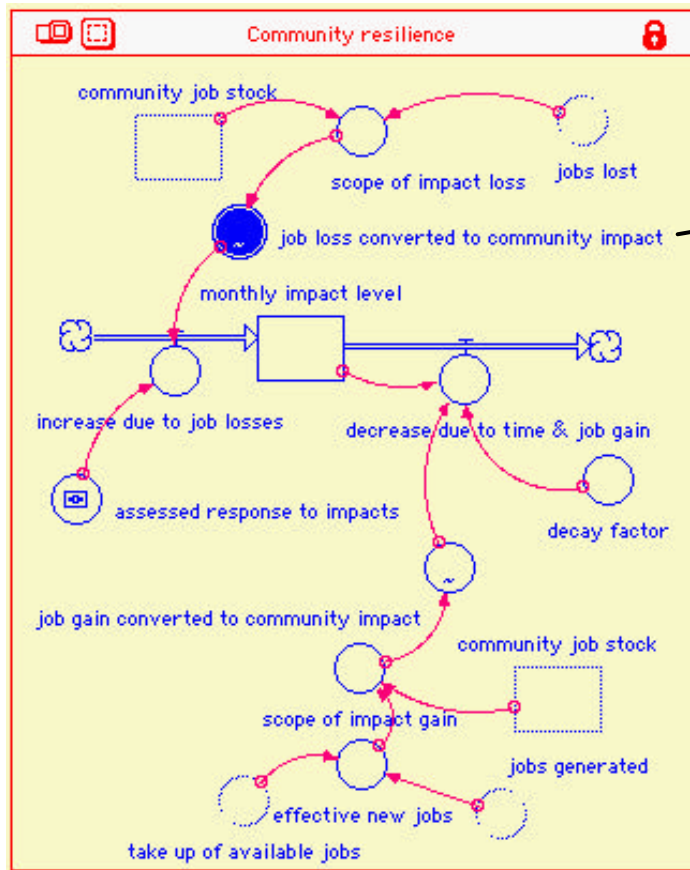
The cloud symbols represent the boundaries of the model. The flows run from left to right between the cloud symbols.

Circles represent points in the model at which the flows can be controlled. They can also be thought of as “containers” for logical or mathematical instructions defining the actions of the model. In this model, circles are included to provide the opportunity to include action but the actions were not necessarily activated. An example is the ‘multiplier’ that was set at ‘1’ for the social impact analyses described in this and other RFA reports.

The arrows connecting elements of the model represent connections through which information flows.

through government policy, market conditions or any other factor that can realistically interact with the labour market.

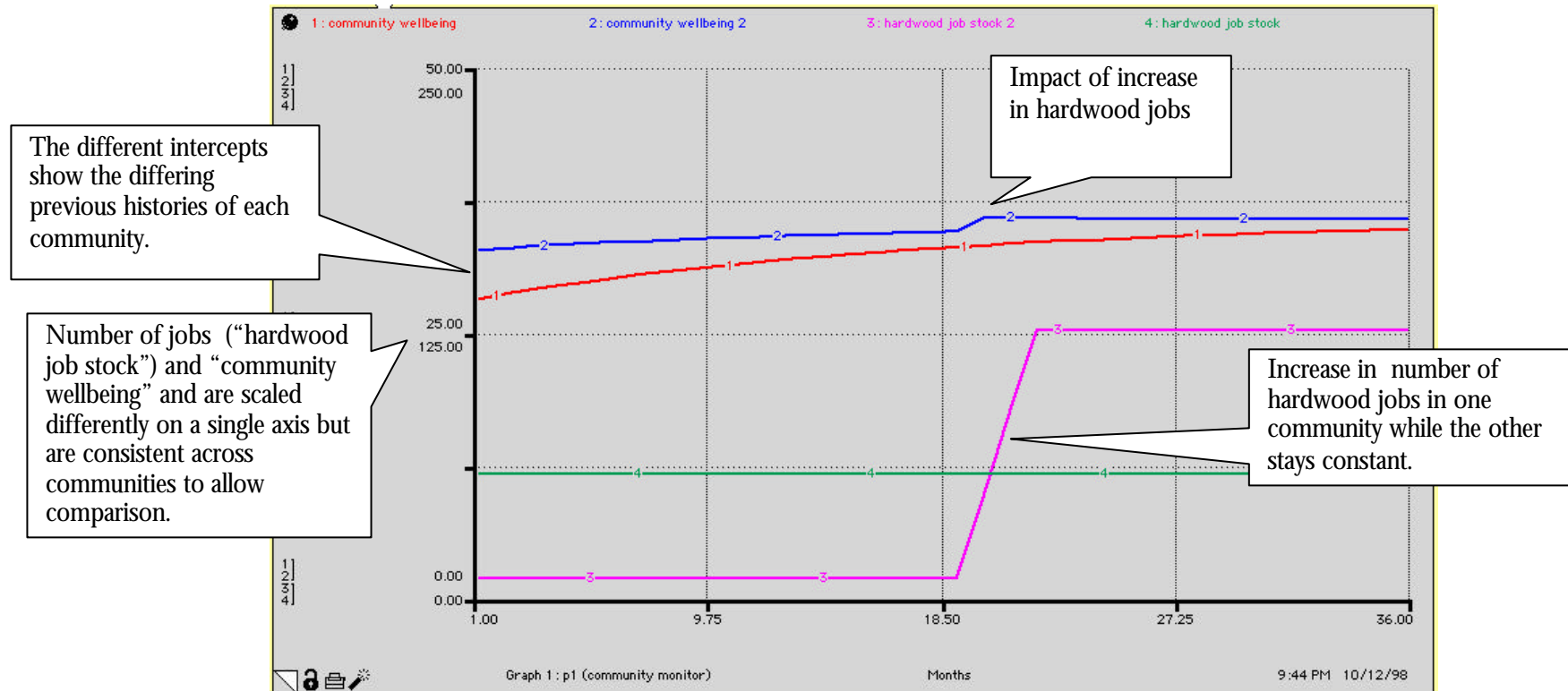
The circles in the model are the points at which control or transformation instructions can be inserted. These can be in a number of forms—values, functions or plots depicting the assumed relationship between input and output variables. For example, the number of jobs lost in a community is not, of itself, a useful direct Indicator of the impact on the community. The impact will depend on a number of things including the number of jobs in the community. One job lost from a pool of 10 jobs will probably have more impact than one job lost from a pool of 1,000 jobs.



An example of a transformation control.. Here, the “scope of job loss” measured by the number lost as a proportion of the total jobs in the community is converted to an index of perceived loss—“community impact”—scaled in the same way as the impacts assessed by SAU officers during community workshops.

OUTPUT FROM THE MODEL

The actions of the model at any point can be displayed in graphical or tabular form. In the example shown here, two communities are compared on the measure of “community wellbeing” over a period of three years. Also shown on the graph is the number of hardwood jobs in each community. In one community the number



of jobs increases beginning halfway through the period. This results in a small increase in overall community wellbeing. The size of the increase in wellbeing depends upon a number of features of that community. These include the overall number of jobs already in the community and the previous history of the community at dealing with change. The graph also shows that one community started the period with greater resilience than the other (the different intercepts with the vertical axis) did. Because, for this analysis, the only changes the model was asked to make in the communities was to the number of hardwood jobs, the

community wellbeing tends toward being asymptotic—over time, the communities reach a plateau. The rate at which this plateau is reached depends, again, on the resilience and size of each community.

It is important to note here that this simplistic view of the community is not a function of the software or a limitation of the model. Controls were built into the logic so that the future of a community could reflect both adverse and supporting events. However, because the aim of the present exercise was to compare communities on only one measure, changes in hardwood jobs, all factors other than the previous history of each community has been held constant to throw the role of hardwood jobs into sharp relief.

APPENDICES

1. Summary of research evidence for some of the key psychological and sociological assumptions built into the model¹.
2. Documentation from *Ithink* showing (a) the graphic interface for two communities, (b) the full logic of and values used for the model and, (c) example output. Note that the documentation of the logic and values is created automatically by the software as the model is constructed using the graphic interface.

¹ We gratefully acknowledge the contribution made in collating and reviewing the relevant research by Ms Tamar Balkin BA (Hons) MAPS.

RESEARCH RELEVANT TO SOCIAL IMPACT MODEL ASSUMPTIONS.

SECTION OF THE MODEL	FINDINGS/COMMENTS
1. COMMUNITY RESILIENCE	
Decrease due to time and job gain	The model proposes that the impact of stressors associated with job loss on a town's resilience decreases over time. In a study of the impact of stressors over a 15 year time period Ensel and Lin (1996) found that although "time does not heal all wounds, it does heal some" (page 80).
Job loss converted to community impact	<p>The graph, which has been generated to explain this relationship, is based on the unemployment literature. The graph indicates that job loss initially has a severe impact on the community, which peters off over time. Warr and Jackson (1987) in a longitudinal study of unemployed men found a substantial deterioration in their psychological well being (as measured by the GHQ-12) in the first 6 months, of unemployment. After six months, the deterioration stabilised however the psychological well being of these men did not rise to "normal levels".</p> <p>The stabilisation of the mental health of the unemployed is due to an adaptation to their current circumstance, in some cases this is constructive in others it is "resigned". Constructive adaptation involves a person taking positive steps to develop interest and activities outside of the labour market. For example unemployed people may become involved in voluntary, religious or community organisations. (The community may have a role in facilitating this process, depending on its assessed response to impacts.) In contrast resigned adaptation involves the individual reducing their aspirations "By wanting less, long-term unemployed people achieve less, and they become less." (Warr et al, 1988 p.55).</p> <p>Warr explained that after 6 months the unemployed see the future as predictable, they know how to deal with social security, they are able to fill their time, and are less concerned about financial or psychological collapse.</p> <p>These findings are based on studies conducted in the United Kingdom where the unemployed receive benefits for as long as they are unemployed. Warr et al (1988) cautions about the generalizability of these findings to a country where individuals lose unemployment benefits after a period of time. In such circumstance, the individual will experience an increase in financial strain, which in turn effects psychological well being.</p>

Job gain converted to community impact	This relationship is also described by a graph in the model. The graph displays a sharp increase in job gain converted to community impact as the scope of the impact of the gain increases.
	There are two main theories of employment, which are used to explain the experiences of the unemployed. Marie Jahoda (1982) proposed that work provided latent and manifest benefits to the individual, and hence irrespective of the "quality" of the job a person with a job is better off than a person without. Thus her model predicts that there will be an increase in the psychological well being of individuals when there is an increase in jobs.
	More recently, based on a large amount of research with unemployed people in the UK, Peter Warr developed what is termed the vitamin model of employment. (see pages 271-274) Warr proposed that there are nine environmental factors common to work situations that influence mental health. The presence of these factors ensures that the individual is mentally well, but like vitamins, excess does not increase ones well being beyond a certain point. Hence there will be an initial increase in job gain converted to community impact as the scope of the gain increases, but once the community has reached it's quota the impact will slow down.
	In summary the most effective way of improving the psychological well being of an unemployed individual is for them to gain employment (Warr et al, 1988; and Turner et al, 1991).
Assessed responses due to impacts.	<p>This is an indication of how well the town has coped with stressors in the past.</p> <p>The model assumes that:</p> <p>Past coping predicts future coping</p> <p>An estimate of past coping is based on the number of events the town had to cope with and their ability to cope, not the type of event.</p>
	<p>Assumption 1: Past coping success/ failure predicts future coping success/failure.</p> <p>As described above a person can cope with unemployment in an adaptive or a maladaptive way (Warr, et al, 1988). The number and severity of the stressors and the individuals coping ability influence how an individual copes with multiple stressors.</p> <p>Severity and frequency of stressors:</p> <p>In the 1970's researchers at Washington University began to study the impact of life events on physical health. They found that the greater the severity and the number of life changes a person encounters the greater the impact on the individual (Wyler, Holmes & Masuda, 1973: cited in Cooper, Cooper & Eaker, 1988). The type of life change (positive or negative) did not influence the impact on the individual. The fundamental aspects of this model have been replicated in recent studies. Ensel and Lin (1996) found that both positive and negative stressors diminish coping resources, which leads to an increase in stress. In this study positive stressors were defined as "changes in status" for example marriage, education, employment etc.</p>

	<p>Benshek and Lopez (1997) found a significant correlation between frequency of life stress and illness and also between severity of life stress and illness for men and women. However, this result was influenced by personality and gender variables, indicating that frequency and severity of events is not sufficient to predict future coping. In support of the concept that stressors have a cumulative effect on stress levels Ensel and Lin (1996) found that past stressors influences a person's ability to cope with present stressors. However, the ability for past stressors to account for variations in current stressors decreases over time.</p> <p>Coping ability: Personality and unemployment literature suggests that some people cope better with stressors than others. Several longitudinal studies have indicated that ability to cope with past major life events and daily hassles are predictors of future emotional and behavioural functioning (see Windle & Windle, 1996 for a review). Researchers have found that some people consistently cope better with stress than others (Kobasa, Maddi & Kahn, 1982). Ensel and Lin found that the likelihood of experiencing stressors as long as 15 years ago influences the current likelihood of experiencing stressors.</p> <p>Although there is debate as to how and why different coping resources influence adaptation, it has been suggested that the ability to cope is a stable trait. Some researchers argue that people who cope with stress well have a characteristic called "hardiness". Hardiness is a personality characteristic hypothesised to buffer people against the deleterious effects of life stress (Benishek & Lopez, 1997). Others argue that people with Type A personality, cope well with unemployment as they are aggressive, ambitious and driven (Leana & Feldman, 1992). In contrast people who do not cope well with stressors and engage in maladaptive coping strategies, remain anxious and are not prepared for future stressors (Cooper et al, 1988).</p>
2. HARDWOOD WORKFORCE FLEXIBILITY	
Positive to negative ratio	<p>SEE ASSUMPTIONS.</p> <p>The predictions in this section are based on the assumption that past experiences teach people what to do in new circumstance. The greater the similarity between the past and the present experience the easier it is for the individual to transfer what they have learnt in the past and apply it in the future (Hesketh, 1997). In addition, the cliché "success breeds success" also applies. Evidence for this comes from the learned helplessness and learned optimism literature as well as the self-efficacy literature. Thus a town which has successfully dealt with a past stressor will have the confidence to do it again. In addition if the stressor was a negative one then the town should cope better with a sudden increase in unemployment such as may occur when a major employer closes.</p>

	<p>Learned helplessness: / Learned optimism. The more intense people find job loss the less coping behaviour they engage in. The intensity of job loss creates a sense of learned helplessness. A person who has successfully mastered past negative events will have more optimism and thus be less likely to fall into this trap. In contrast people who perceive the situation as reversible, are more likely to engage in adaptive coping (Leana & Feldman, 1992). Thus a community, who has had little success in dealing with past negative stressors, will be more likely become resigned and helpless in the face of mass unemployment.</p>
The degree of occupational flexibility is defined by the survey data. It was assumed that the amount of time a worker spent in the timber industry, their education level and whether or not they had had experience in other industries would effect their occupational flexibility.	<p>Experience in other jobs: The less experience a person has had in a variety of industries the less likely that they have skills that can be transferred to other context (Hesketh 1987). Hence it is more difficult for people who have worked in the same job for a long period of time to find alternative employment. In addition, a person who has worked for a long time in the one job has had little experience in applying for other jobs hence it is likely that they will believe that they lack job-seeking skills (Caplan, Vinokur, Price and van Ryn, 1989). Low self-efficacy and self-esteem will decrease the likelihood that one believes they can get a job (see also Bandura, 1977). If a person suffers continued setbacks in applying for jobs they lose their motivation to keep trying. Prolonged unemployment and successive failures to get jobs results in a feeling of helplessness (Caplan et al, 1989).</p>
	<p>Education level: In a factory closure in America the impact of long-term unemployment was more severe among less educated than amongst the more educated people. This is because, less educated workers are more "hard hit psychologically" by unemployment and because unemployment is objectively a worse stressor for them. In addition it is likely to reflect their view of the future (Broman et al, 1995).</p>
	<p>Time in the industry: Although there is little research which measured the impact of the time in an industry on the relationship between unemployment and psychological impact. Time can be understood in terms of age or perhaps seniority. Time in a particular position may reflect the age of the individual. For example a person who has been in the timber industry for 20 years or more will be over the age of 40. Men aged between 20-59 show significantly greater deterioration as a result of unemployment than did older or younger men (Warr, et al, 1988). (Part of this related to financial strain see below).</p>
	The research into the impact of seniority is less clear. Hamilton et al, (1990) found that in a unionised sample, seniority

	impacts the likelihood that someone will get a re-employed in the original job. However Broman et al (1990) found that seniority had no impact on distress levels for white collar workers.
Personal impact level: This was defined by survey data on individual's family circumstances and their financial commitments.	<p>In the unemployment literature, financial strain and social support are seen as factors that influence the relationship between unemployment and psychological well being.</p> <p>Financial strain The greater the financial strain on the individual the greater the impact of unemployment. There is greater financial stress on unemployed men who have dependent children, than single unemployed teenagers who are living in their parent's home (Warr et al., 1988).</p> <p>Social support Social support reduces the severity of the effects of unemployment. (See Strobe & Strobe, 1996 for a review of the impact of social support). Being married and having family in the town are sources of social support. Over time, the unemployed reduce the number of non-family members that they rely on for support, however there is no change in the number of family members relied upon (Warr, 1988). In addition, Spouse support can increase a person's job seeking behaviour (Vinokur & Caplan, 1987). In a study of the impact of a factory closure, Broman et al, (1995) found that there was a progression of distress for men <i>married<cohabiting<widowed<single<divorced<separated</i></p>
	<p>Impact of the local unemployment rate on mental well being Research comparing those who lost jobs with those who remained in the workforce over 6-month period. indicates that the unemployed had lower levels of psychological well-being than their employed counterparts. However there is some evidence that when unemployment levels are relatively high, unemployed people find it easier to attribute the cause to factors outside themselves and are thus maintain a personal sense of psychological well-being. Jackson and Warr, (1987), studies communities with unemployment rates ranging from 10% to 19% and found evidence of resilience in the face of a perceived external threat.</p>

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DOCUMENTATION FROM *IThINK*

The Ithink interface with the user occurs at a number of levels. One is the “control panel” layer on which graphs and tables show the output of a simulation and virtual dials and slider controls provide the opportunity to manipulate input values with ease. A second level is the “documentation” layer. Here, the software automatically creates a text record of the model logic in which equations, parameters and variables are all specified. The following documentation is from the model used in the previous examples and is included here to provide a sense of the transparency of the model—an important factor when stakeholders are interested in the assumptions driving the output.

```
dependency(t) = dependency(t - dt) + (dependency_change) * dt
INIT dependency = dependency_change
dependency_change = GRAPH(participation_potential)
(0.00, 1.00), (0.2, 0.35), (0.4, 0.15), (0.6, 0.04), (0.8, -0.04), (1.00, -0.08), (1.20, -0.14), (1.40, -0.29), (1.60, -0.49), (1.80, -0.78), (2.00, -0.97)
```

DOCUMENT: This component reflects the flexibility available to the community in the degree to which it is dependent on unemployment benefits. It takes into the number of unemployed workers together with the stock of realistically available jobs and weights this by the extent to which the community suffers from unemployment.

```
job_turnover_rate = 0.05
```

DOCUMENT: This figure reflects the vacancy rate in existing jobs created by retirement, illness, migration, etc.

```
number_on_unemployment_benefits = ROUND(RANDOM (38,42,200))
```

DOCUMENT: Number at ABS 1996 Census was 40 people. This figure will vary over time. To avoid assuming a trend in the relatively short term, the model takes 40 as the 'typical' level and each month uses a random number chosen from a rectangular distribution ranging from 38 to 42. The 'ROUND' function makes sure that the figure is a whole number.

```
participation_potential = (community_job_stock*job_turnover_rate*take_up_of_available_jobs)/ number_on_unemployment_benefits
```

DOCUMENT: This component represents the potential for community members currently unemployed to get jobs in the community. It represents the 'effective number of jobs' (those available that can reasonably be taken up by unemployed community members) compared to the number of unemployed people in the community. It takes a value of zero when there are no jobs; '1' when the jobs match the number seeking work; and a number greater than one when there is a demand for labour.

Community job stock is calculated by the model based on ABS figures.

Number of unemployed is based on ABS figures.

'take up' is a judgement made by Social Assessment Officers.

```
take_up_of_available_jobs = 15/32
```

DOCUMENT: This converter provides an opportunity to mirror the likelihood that as jobs become available they does not automatically decrease the pool of people in unemployment in a one-to-one fashion.

It is represented here as a value between 0 and 1 and thus can be interpreted as the probability that a member of the community will be able to take up each available position. The value is derived from data showing the reemployment rate of timber workers.

The figure below is based on Structural Adjustment Report, Rush1997.

$dependency_2(t) = dependency_2(t - dt) + (dependency_change_2) * dt$

INIT $dependency_2 = dependency_change_2$

$dependency_change_2 = GRAPH(participation_potential_2)$

(0.00, 1.00), (0.2, 0.35), (0.4, 0.15), (0.6, 0.04), (0.8, -0.04), (1.00, -0.08), (1.20, -0.14), (1.40, -0.29), (1.60, -0.49), (1.80, -0.78), (2.00, -0.97)

DOCUMENT: This component reflects the flexibility available to the community in the degree to which it is dependent on unemployment benefits. It takes into the number of unemployed workers together with the stock of realistically available jobs and weights this by the extent to which the community suffers from unemployment.

$job_turnover_rate_2 = 0.05$

DOCUMENT: This figure reflects the vacancy rate in existing jobs created by retirement, illness, migration, etc.

$number_on_unemployment_benefits_2 = ROUND(RANDOM(38,42,200))$

DOCUMENT: Number at ABS 1996 Census was 40 people. This figure will vary over time. To avoid assuming a trend in the relatively short term, the model takes 40 as the 'typical' level and each month uses a random number chosen from a rectangular distribution ranging from 38 to 42.

The 'ROUND' function makes sure that the figure is a whole number.

$participation_potential_2 = (community_job_stock_2 * job_turnover_rate_2 * take_up_of_available_jobs_2) / number_on_unemployment_benefits_2$

DOCUMENT: This component represents the potential for community members currently unemployed to get jobs in the community. It represents the 'effective number of jobs' (those available that can reasonably be taken up by unemployed community members) compared to the number of unemployed people in the community. It takes a value of zero when there are no jobs; '1' when the jobs match the number seeking work; and a number greater than one when there is a demand for labour.

Community job stock is calculated by the model based on ABS figures.

Number of unemployed is based on ABS figures.

'take up' is a judgement made by Social Assessment Officers.

$take_up_of_available_jobs_2 = 15/32$

DOCUMENT: This converter provides an opportunity to mirror the likelihood that as jobs become available they does not automatically decrease the pool of people in unemployment in a one-to-one fashion.

It is represented here as a value between 0 and 1 and thus can be interpreted as the probability that a member of the community will be able to take up each available position. The value is derived from data showing the reemployment rate of timber workers.

The figure below is based on Structural Adjustment Report, Rush1997.

$hardwood_job_stock(t) = hardwood_job_stock(t - dt) + (hardwood_jobs_generated - hardwood_jobs_lost) * dt$

INIT $hardwood_job_stock = 59$

$hardwood_jobs_generated = timber_growth_factor + timber_initiatives$

$hardwood_jobs_lost = 0$

$timber_growth_factor = 0$

DOCUMENT: This component allows for an increase in the stock of timber related jobs in the community brought about as part of 'natural' industry growth.

$timber_initiatives = GRAPH(Time)$

(1.00, 0.00), (4.50, 0.00), (8.00, 0.00), (11.5, 0.00), (15.0, 0.00), (18.5, 0.00), (22.0, 0.00), (25.5, 0.00), (29.0, 0.00), (32.5, 0.00), (36.0, 0.00)

$hardwood_job_stock_2(t) = hardwood_job_stock_2(t - dt) + (hardwood_jobs_generated_2 - hardwood_jobs_lost_2) * dt$

INIT $hardwood_job_stock_2 = 10$

$hardwood_jobs_generated_2 = timber_growth_factor_2 + timber_initiatives_2$

$hardwood_jobs_lost_2 = 0$

timber_growth_factor_2 = 0

DOCUMENT: This component allows for an increase in the stock of timber related jobs in the community brought about as part of 'natural' industry growth.

timber_initiatives_2 = GRAPH(TIME)

(1.00, 0.00), (4.50, 0.00), (8.00, 0.00), (11.5, 0.00), (15.0, 0.00), (18.5, 0.00), (22.0, 0.00), (25.5, 0.00), (29.0, 0.00), (32.5, 0.00), (36.0, 0.00)

$A_personal_impact_accumulation(t) = A_personal_impact_accumulation(t - dt) + (impact_level - recovery_pers) * dt$

INIT $A_personal_impact_accumulation = 0$

$impact_level = hardwood_jobs_lost * degree_of_personal_flexibility$

DOCUMENT: This indicator reflects the 'mass' of the impact when a particular number of workers lose their jobs.

$recovery_pers = A_personal_impact_accumulation * ((decrease_due_to_time_ \& _job_gain) / (positive_to_negative_ratio + 1))$

$cumulative_occupational_inflexibility(t) = cumulative_occupational_inflexibility(t - dt) + (inflexibility_level - recovery_occup) * dt$

INIT $cumulative_occupational_inflexibility = 0$

$inflexibility_level = hardwood_jobs_lost * degree_of_occupational_flexibility$

DOCUMENT: This indicator reflects the 'mass' of the impact when a particular number of workers lose their jobs.

$recovery_occup = cumulative_occupational_inflexibility * ((decrease_due_to_time_ \& _job_gain) / (positive_to_negative_ratio + 3))$

$degree_of_occupational_flexibility = 6.13$

DOCUMENT: This is the mean figure for the hardwood workforce within the community derived from the demographic section of the workforce survey.

The index is constructed by taking into account the time a worker has been in the timber industry; whether or not they have had experience in other industries; and the level of their formal education.

It is assumed that the higher a worker's education level, the more portable are their skills. Similarly, the less their time in the timber industry and having had experience in other industries increases their occupation 'flexibility'.

The figure reflects a workers flexibility to move from the community and the potential impact of unemployment.

$degree_of_personal_flexibility = 2.8$

DOCUMENT: This is the mean figure for the hardwood workforce within the community derived from the demographic section of the workforce survey.

The index is constructed by taking into account the number and extent of personal obligations and support surrounding each worker. These were dependent partner, dependent children, financial obligation for accommodation and having family in the community.

The figure reflects a workers flexibility to move from the community and the potential impact of unemployment.

$positive_to_negative_ratio = 1.5$

DOCUMENT: This value is the ratio of community response to a past positive event at community level to the community response to a negative event. It provides a measure of community adaptability.

The ratings were made during workshops held within each community and took into account factors such as : the scope of the event; the breadth of community participation and whether any goals were achieved.

A ratio of '1' suggests that the community response is similar to both positive and negative events. Values greater than one reflect greater success with positive events; a value less than one, greater success with negative events.

$cumulative_occupational_inflexibility_2(t) = cumulative_occupational_inflexibility_2(t - dt) + (inflexibility_level_2 - recovery_occup_2) * dt$

INIT $cumulative_occupational_inflexibility_2 = 0$

$inflexibility_level_2 = hardwood_jobs_lost_2 * degree_of_occupational_flexibility_2$

DOCUMENT: This indicator reflects the 'mass' of the impact when a particular number of workers lose their jobs.

$\text{recovery_occup_2} = \text{cumulative_occupational_inflexibility_2} * (\text{decrease_due_to_time_}\&_ \text{job_gain_2}) / (\text{positive_to_negative_ratio_2} + 3)$

$\text{personal_impact_accumulation_2}(t) = \text{personal_impact_accumulation_2}(t - dt) + (\text{impact_level_2} - \text{recovery_pers_2}) * dt$

INIT $\text{personal_impact_accumulation_2} = 0$

$\text{impact_level_2} = \text{hardwood_jobs_lost_2} * \text{degree_of_personal_flexibility_2}$

DOCUMENT: This indicator reflects the 'mass' of the impact when a particular number of workers lose their jobs.

$\text{recovery_pers_2} = \text{personal_impact_accumulation_2} * ((\text{decrease_due_to_time_}\&_ \text{job_gain_2}) / (\text{positive_to_negative_ratio_2} + 1))$

$\text{degree_of_occupational_flexibility_2} = 5.7$

DOCUMENT: This is the mean figure for the hardwood workforce within the community derived from the demographic section of the workforce survey.

The index is constructed by taking into account the time a worker has been in the timber industry; whether or not they have had experience in other industries; and the level of their formal education.

It is assumed that the higher a worker's education level, the more portable are their skills, Similarly, the less their time in the timber industry and having had experience in other industries increases their occupation 'flexibility'.

The figure reflects a workers flexibility to move from the community and the potential impact of unemployment.

$\text{degree_of_personal_flexibility_2} = 2.9$

DOCUMENT: This is the mean figure for the hardwood workforce within the community derived from the demographic section of the workforce survey.

The index is constructed by taking into account the number and extent of personal obligations and support surrounding each worker. These were dependent partner, dependent children, financial obligation for accommodation and having family in the community.

The figure reflects a workers flexibility to move from the community and the potential impact of unemployment.

$\text{positive_to_negative_ratio_2} = 1.2$

DOCUMENT: This value is the ratio of community response to a past positive event at community level to the community response to a negative event. It provides a measure of community adaptability.

The ratings were made during workshops held within each community and took into account factors such as : the scope of the event; the breadth of community participation and whether any goals were achieved.

A ratio of '1' suggests that the community response is similar to both positive and negative events. Values greater than one reflect greater success with positive events; a value less than one, greater success with negative events.

$\text{community_job_stock}(t) = \text{community_job_stock}(t - dt) + (\text{jobs_generated} - \text{jobs_lost}) * dt$

INIT $\text{community_job_stock} = 18040$

DOCUMENT: Based on the ABS 1996 Census labour force
(employed fulltime+employed parttime+ employed not stated)

$\text{jobs_generated} = (\text{hardwood_jobs_generated} + \text{growth_factor} + \text{other_initiatives}) * \text{job_gain_multiplier}$

DOCUMENT: In any given time period the number of jobs created is the sum of those generated internally within the community and those created by external initiatives.

$\text{jobs_lost} = (\text{hardwood_jobs_lost} + \text{general_decline}) * \text{multiplier}$

$\text{general_decline} = (60/60)$

DOCUMENT: This component of the model reflects any 'background' drift toward smaller job stocks in the community. Because the model is concerned with reflecting the social impact of policy changes in the timber industry, changes in employment opportunities in the timber industry are treated as 'shocks' over and above the background trend and as occurring at a point in time.

The current measure is the difference in ABS estimates of numbers of people employed in 1991 and 1996.

growth_factor = 12.3

DOCUMENT: This factor allows for a generalised growth in jobs as a function of activity already in the community. It is used to allow explicit modelling of a situation in which some industries create jobs.

Lost jobs are modelled as a draining of the total job stock by the 'general decline' factor and the 'multiplier'.

job_gain_multiplier = 1

multiplier = 1.0

other_initiatives = 0

DOCUMENT: This controller allows for the creation of jobs due to the arrival of new organisations or industries. The increase in jobs could be specified as time dependent ramp or step functions depending upon the timing of job creation. Initially it is set to zero.

community_job_stock_2(t) = community_job_stock_2(t - dt) + (jobs_generated_2 - jobs_lost_2) * dt

INIT community_job_stock_2 = 361

DOCUMENT: Based on the ABS 1996 Census labour force

(employed fulltime+employed parttime+ employed not stated)

jobs_generated_2 = (hardwood_jobs_generated_2+growth_factor_2+other_initiatives_2)*job_gain_multiplier_2

DOCUMENT: In any given time period the number of jobs created is the sum of those generated internally within the community and those created by external initiatives.

jobs_lost_2 = (hardwood_jobs_lost_2+general_decline_2)*multiplier_2

general_decline_2 = (60/60)

DOCUMENT: This component of the model reflects any 'background' drift toward smaller job stocks in the community. Because the model is concerned with reflecting the social impact of policy changes in the timber industry, changes in employment opportunities in the timber industry are treated as 'shocks' over and above the background trend and as occurring at a point in time.

The current measure is the difference in ABS estimates of numbers of people employed in 1991 and 1996.

growth_factor_2 = 0.5

DOCUMENT: This factor allows for a generalised growth in jobs as a function of activity already in the community. It is used to allow explicit modelling of a situation in which some industries create jobs.

Lost jobs are modelled as a draining of the total job stock by the 'general decline' factor and the 'multiplier'.

job_gain_multiplier_2 = 1

multiplier_2 = 1.0

other_initiatives_2 = 0

DOCUMENT: This controller allows for the creation of jobs due to the arrival of new organisations or industries. The increase in jobs could be specified as time dependent ramp or step functions depending upon the timing of job creation. Initially it is set to zero.

monthly_impact_level(t) = monthly_impact_level(t - dt) + (increase_due_to_job_losses - decrease_due_to_time_&_job_gain) * dt

INIT monthly_impact_level = 7.6

increase_due_to_job_losses = job_loss_converted_to_community_impact * (1/assessed_response_to_impacts)

DOCUMENT: This converter takes the "community impact" value derived from the number of actual jobs lost and then weights that impact by the ability of the community to cope with further impacts. Because this latter term is a decimal value less than or equal to '1', it is expressed as the reciprocal value so that less able communities feel the impact of a given number of job losses more than more able communities.

decrease_due_to_time_&_job_gain = monthly_impact_level*(decay_factor)+job_gain_converted_to_community_impact

assessed_response_to_impacts = 0.83

DOCUMENT: This value is sum of the rated community responses to both positive and negative events compared to the maximum possible rating.

A value of one means that the maximum has been achieved; smaller values reflect the relative inability of the community to meet these challenges.

decay_factor = 0.05613

effective_new_jobs = jobs_generated*take_up_of_available_jobs

scope_of_impact_gain = effective_new_jobs/ community_job_stock

scope_of_impact_loss = jobs_lost/ community_job_stock

DOCUMENT: Calculates the proportion of the community total job stock lost when jobs are lost in a given month

job_gain_converted_to_community_impact = GRAPH(scope_of_impact_gain)

(0.00, 0.03), (0.005, 0.06), (0.01, 0.18), (0.015, 0.75), (0.02, 1.80), (0.025, 3.81), (0.03, 5.00), (0.035, 5.43), (0.04, 5.79), (0.045, 5.97), (0.05, 6.00)

job_loss_converted_to_community_impact = GRAPH(scope_of_impact_loss)

(0.00, 0.03), (0.005, 0.06), (0.01, 0.18), (0.015, 0.75), (0.02, 1.80), (0.025, 3.81), (0.03, 5.00), (0.035, 5.43), (0.04, 5.79), (0.045, 5.97), (0.05, 6.00)

monthly_impact_level_2(t) = monthly_impact_level_2(t - dt) + (increase_due_to_job_losses_2 - decrease_due_to_time_&_job_gain_2) * dt

INIT monthly_impact_level_2 = 3.0

increase_due_to_job_losses_2 = job_loss_converted_to_community_impact_2 * (1/assessed_response_to_impacts_2)

DOCUMENT: This converter takes the "community impact" value derived from the number of actual jobs lost and then weights that impact by the ability of the community to cope with further impacts. Because this latter term is a decimal value less than or equal to '1', it is expressed as the reciprocal value so that less able communities feel the impact of a given number of job losses more than more able communities.

decrease_due_to_time_&_job_gain_2 = monthly_impact_level_2*(decay_factor_2)+job_gain_converted_to_community_impact_2

assessed_response_to_impacts_2 = 0.92

DOCUMENT: This value is sum of the rated community responses to both positive and negative events compared to the maximum possible rating.

A value of one means that the maximum has been achieved; smaller values reflect the relative inability of the community to meet these challenges.

decay_factor_2 = 0.05613

effective_new_jobs_2 = jobs_generated_2*take_up_of_available_jobs_2

scope_of_impact_gain_2 = effective_new_jobs_2/community_job_stock_2

scope_of_impact_loss_2 = jobs_lost_2/community_job_stock_2

DOCUMENT: Calculates the proportion of the community total job stock lost when jobs are lost in a given month

job_gain_converted_to_community_impact_2 = GRAPH(scope_of_impact_gain_2)

(0.00, 0.03), (0.005, 0.06), (0.01, 0.18), (0.015, 0.75), (0.02, 1.80), (0.025, 3.81), (0.03, 5.00), (0.035, 5.43), (0.04, 5.79), (0.045, 5.97), (0.05, 6.00)

job_loss_converted_to_community_impact_2 = GRAPH(scope_of_impact_loss_2)

(0.00, 0.03), (0.005, 0.06), (0.01, 0.18), (0.015, 0.75), (0.02, 1.80), (0.025, 3.81), (0.03, 5.00), (0.035, 5.43), (0.04, 5.79), (0.045, 5.97), (0.05, 6.00)

community_wellbeing = inverter-monthly_impact_level_2

community_wellbeing_2 = inverter_2-monthly_impact_level_2

inverter = 36

inverter_2 = 36

timber_workers_occupational_inflexibility = inverter-cumulative_occupational_inflexibility

timber_workers_occupational_inflexibility_2 = inverter_2-cumulative_occupational_inflexibility_2

timber_workers_personal_wellbeing = inverter-A:personal_impact_accumulation

timber_workers_personal_wellbeing_2 = inverter_2-personal_impact_accumulation_2

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