

Australian Alps Socio-Economic Profile



Report by:

Samantha Gadsby¹, Michael Lockwood¹, Susan Moore², Allan Curtis³ and Sharon Joyce¹

1. University of Tasmania 2. Murdoch University 3. Charles Sturt University

June 2013

Australian Alps Socio-Economic Profile

ISBN: 978-1-86295-709-1

Hub Publication Reference: LaP2013/0630 - 6

Enquiries to: Michael.Lockwood@utas.edu.au

© University of Tasmania

This work is copyright. It may be produced in whole or in part for study or training purposes subject to the inclusion of an acknowledgement of the source. It is not intended for commercial sale or use. Reproduction for other purposes other than those listed above requires the written permission from the authors.

Requests and enquiries concerning reproduction rights should be addressed to:

Communications Manager
Landscapes and Policy Hub
Private Bag 141, Hobart Tasmania 7001
Tel: +61 3 6226 6276
Email: Landscapes.Policy@utas.edu.au

Purpose of Report

The purpose of the report is to bring together secondary data on the social characteristics of the Australian Alps. It provides a social profile that will inform the identification of potential futures for the region and help shape options for institutional, planning and management arrangements directed towards improving biodiversity outcomes. The information presented is primarily drawn from the Australian Bureau of Statistics (ABS) Censuses of Population and Housing (2001, 2006, 2011). The report was produced by the Social and Institutional Futures Team and is an output of the Landscapes and Policy Research Hub.

Please cite the report as follows:

Gadsby S, Lockwood M, Moore SA, Curtis A & Sharon Joyce (2013) *Australian Alps Socio-Economic Profile*, University of Tasmania, Hobart, Tasmania.

About the Authors

Samantha Gadsby completed her masters studies in 2012 in the School of Geography and Environmental Studies at the University of Tasmania.

Dr Michael Lockwood is an environmental social scientist at the University of Tasmania.

Associate Professor Susan Moore is a researcher in the environmental and conservation sciences at Murdoch University, WA.

Professor Allan Curtis is the Professor of Integrated Environmental Management at the Institute for Land, Water and Society, Charles Sturt University.

Sharon Joyce is a masters student in 2012 in the School of Geography and Environmental Studies at the University of Tasmania.

Acknowledgements

Many thanks to Suzie Gaynor, Communications Manager, for preparing this report for publishing. The report is an output from the Landscapes and Policy Research Hub. The hub is supported through funding from the Australian Government's National Environmental Research Program www.environment.gov.au/nerp and involves researchers from the University of Tasmania (UTAS), The Australian National University (ANU), Murdoch University, the Antarctic Climate and Ecosystems Cooperative Research Centre (ACE CRC), Griffith University and Charles Sturt University (CSU).

Photo Credits: Sarah Clement (front cover image, left) and Suzie Gaynor (all others)



Contents

Frequently Used Abbreviations	2
Executive Summary	3
1. Introduction	7
1.1. Background and purpose.....	7
1.2 Spatial delineation of the study region.....	7
1.3 Approach	8
2. Population	9
2.1 Age structure.....	11
2.2 Sex ratio	12
2.3 Number of youth	13
2.4 Indigenous population.....	13
2.5 Number, age and mobility of farmers/farm managers.....	13
2.6 Number of hospitality, retail and service managers	14
3. Education	14
3.1 Persons with post-school qualifications	14
3.2 Farmers/farm managers with post-school qualifications.....	14
4. Health	14
5. Cultural diversity.....	14
6. Work force	15
6.1 Labour force participation rate.....	15
6.2 Unemployment rate.....	15
6.3 Youth unemployment rate	15
6.4 Employment in the agriculture, fisheries and forestry sector.....	15
6.5 Employment in the accommodation, food and service sector.....	15
6.6 Persons volunteering in last 12 months	16
7. Average annual taxable income	16
8. Agricultural holdings.....	16
9. Tourism establishments and expenditure	17
10. Physical infrastructure.....	17
10.1 Building approvals per 1,000 persons	17
10.2 Home ownership.....	17
10.3 Persons with access to the internet at home	17
11. Social disadvantage	18
11.1 Low income households	18
11.2 Housing stress.....	18
11.3 Index of relative socio-economic disadvantage	18
12. Implications for biodiversity conservation	19
13. References	21
Appendix 1 Profile variable descriptions	20
Appendix 2 SLA data tables.....	24
Table A2.1 Population	24
Table A2.1 Population (<i>continued</i>)	24
Table A2.2 Education.....	24
Table A2.3 Work force	25
Table A2.4 Income, agricultural holdings and physical infrastructure	25
Table A2.5 Socio-economic disadvantage	25



Frequently Used Abbreviations

ABS	Australian Bureau of Statistics
AFF	Agriculture, Fisheries and Forestry (sector)
AFS	Accommodation, Food and Service (sector)
CD	Collection District
DSEWPaC	Department of Sustainability, Environment, Water, Population and Communities
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999 (Cwlth)</i>
FFM	Farmers/Farm Managers (sector)
IRSD	Index of Relative Socio-Economic Disadvantage
LGA	Local Government Area
LOTE	Language other than English
MNES	Matters of National Environmental Significance
NERP	National Environmental Research Program
OEH	Office of Environment and Heritage (NSW)
PHIDU	Public Health Information Development Unit
SA1	Statistical Area Level 1 Division
SLA	Statistical Local Area
UCL	Urban Centre Locality

Executive Summary

The Landscapes and Policy Hub, established under the Australian Government's National Environmental Research Program, is researching tools, techniques and policy pathways for landscape-scale biodiversity conservation. This research effort focuses on two contrasting study areas – the Australian Alps, a largely publicly owned series of mountain protected areas; and the Tasmanian Midlands, largely privately owned lowlands primarily managed for agriculture. For the Australian Alps Study Area, the hub's Social and Institutional Futures Project is investigating the social and institutional elements of these landscapes, with particular focus on the subalpine and alpine landscapes scattered through the Australian Alps. This report brings together secondary data on the socio-economic characteristics of the communities in the Australian Alps. It provides a socio-economic profile that will be used to help identify potential futures for the region and shape options for institutional, planning and management arrangements directed towards improving biodiversity outcomes.

The themes and variables selected for this profile were based on work conducted in the Murrumbidgee Valley by the Bureau of Rural Sciences (Curtis et al. 2003a), as well as reports on social and economic aspects of natural resource management by Webb et al. (2004) and ABS (2004). The information presented is primarily drawn from the Australian Bureau of Statistics (ABS) Censuses of Population and Housing (2001, 2006, 2011). Analyses were undertaken at the Statistical Local Area (SLA) level. There are 22 SLAs located within or partially overlapping the Australian Alps (one in the ACT, six in NSW and 15 in Victoria). It was beyond the scope of this report to cover all these SLAs. Seven SLAs were chosen for analysis based on the presence of important 'gateway' towns that provide services for tourists and recreationists accessing the largest areas of treeless subalpine and alpine landscape – Snowy River and Tumbarumba in NSW; and Towong Pt B, Falls Creek Alpine Resort, Mount Hotham Alpine Resort, Alpine-East and Alpine-West in Victoria. The term 'Alps Focal Region' is used to refer to these seven statistical local areas.

A summary socio-economic profile of the Alps Focal Region is given in Table 1. In 2011, approximately 43,358 people lived within the region. During the ten-year period from 2001 to 2011, the population decreased by 456 persons, with an annual population decrease of 0.1%. The majority (41.2%) of urban locality centres (ULC) in the Alps Focal Region had small populations of between 200 and 999 people, with 71.4% of these towns experiencing an increase in population between 2001 and 2011. For all 17 ULCs in the focal region, 47.1% experienced an increase, 17.6% were stagnant and 35.3% experienced a decrease in population. Since 2001, the rural populations (populations outside urban locality centres) in the selected statistical local areas were stable or declining.

The median age of the population was similar to the median for both Victoria and NSW. The ratio of males to females was considerably higher than the ratio for Victoria and NSW. The number of people aged 15-24, as a percentage of the total population, was higher in the Australian Alps than in Victoria and NSW. However, this result may be a consequence of censuses being conducted during winter when many young adults are in the region for the ski season. The percentage of Indigenous people in The Australian Alps was similar to that for Victoria but lower than for NSW. The percentage of persons with post school qualifications in the Australian Alps was similar to the average for Victoria and NSW.

Labour force participation rates in the region are strong in comparison to Victoria and NSW as a whole, and corresponding the rates of unemployment are relatively low. Agriculture and tourism are important contributors to economic activity in the Alps Focal Region. The proportion of the population employed within the agriculture, fisheries and forestry (AFF) sector was four times that for Victoria and NSW. The proportion of people outside ULCs who identified themselves as farmers/farm managers was 14.3%. The percentage of private land in the selected statistical local areas set aside for conservation ranged from 13.0% to 2.5%.

The proportion of the population employed in the accommodation, food and service (AFS) sector was double that for Victoria and NSW. In 2011, visitors to the Victorian portion of the Alps Focal Region were estimated at 3.18 million spending \$806 million. For the same year, the NSW portion received an estimated 1.367 million visitors spending \$460 million. The Victorian portion contributes 10.7% of tourism accommodation to that state, while the NSW portion provides 4.6% of tourism accommodation in that State.

Social disadvantage is an important component of the socio-economic profile for the Alps Focal Region. The proportion of low income households in the region (1.4%) is similar to that for Victoria and NSW (1.6% and 1.4% respectively). For mortgage stress, the value for the region (10.1% of low income families were experiencing mortgage stress) was again very similar to those for each of the two states: Victoria at 11.4% and NSW with 11.1%. The index of relative socio-economic disadvantage illustrates a broad range of indices across the Alps Focal Region from 1060 for the Snowy River Statistical Local Area to 956 for Alpine West. The index has a base of 1000 for Australia: scores above 1000 indicate relative advantage and those below, relative disadvantage.

We consider these profiling details to have the following implications for biodiversity conservation in the Alps Focal Region.

1. The population of this Alps Focal Region shares some common characteristics (age, education, health, level of socio-economic disadvantage) with the broader populations of NSW and Victoria. These similarities, with important exceptions that are explored below, suggest that biodiversity policy and institutional initiatives likely to succeed with these broader populations have a similar chance of success in the Alps Focal Region.
2. There are significance differences within the region between the Alpine Resorts, SLAs such as Snowy River that are strongly linked with alpine tourism, and Tumbarumba and Alpine-West that are more dependent on agriculture and forestry. Conservation engagement strategies need to take into account these differences, with media, messages and programs tailored to their varied employment dependencies, lifestyles and values.
3. The extent of agricultural lands and employment in agriculture, fisheries and forestry suggests possibilities for on-farm and in-stream conservation, plus a continuing emphasis on biodiversity conservation in production forests, public protected areas, and on private lands set aside for conservation (for example, covenanted private lands) in the Alps Focal Region.
4. Although agriculture and tourism are important sectors, the numbers employed in these sectors have declined over the period 2001 to 2011 in contrast to small increases state-wide. These regional sectoral declines are paralleled by declining regional populations over the same period. Agriculture and tourism are key sectors for biodiversity conservation so these

declines raise some cause for concern. For example, there may be less financial capacity to take on conservation activities with a high level of public rather than private benefit.

5. Rural landholders in the region have a high median off-farm income per farm compared to the state-wide figures. Only 14.3% of rural landholders self-identify as farmers or farm managers. Non-farmers are more likely to hold pro-conservation values and attitudes, but have less time and are less connected to conservation networks such as landcare. There are opportunities and challenges here for conservation programs targeting rural landholders in the region, including those owing properties adjoining protected areas (which are likely to be more attractive to non-farmers).
6. At a state and national level, tourism in the Alps Focal Region is economically and socially important. Partnering sustainable tourism and its economic benefits with biodiversity conservation offers great potential for biodiversity initiatives in the Alps Focal Region. State and national level support from biodiversity conservation initiatives from within the tourism industry would be a useful policy initiative given the value of tourism to the state and nation.
7. Although only a small proportion of the Alps Focal Region's population identified themselves as being Indigenous (0.9%), these people stand to make a very significant contribution to conservation in the Australian Alps. Involvement of Traditional Owner Reference Groups is strengthening representation of Indigenous interests and aspirations in the management of protected areas across the Australian Alps, as well through a partnership with Falls Creek Alpine Resort. As a result, Indigenous culture and practices are expected to have a greater influence on public land management in the region, and employment opportunities are likely to be enhanced.
8. The variability in socio-economic (dis)advantage across the Alps Focal Region suggests that within the region there is an associated variability in the ability of persons and associated communities to respond to challenges and to commit to enterprises, such as biodiversity conservation, that may have limited immediate economic returns to individuals. This variability emphasises the importance of considering a variety of carefully tailored approaches based on the relative socio-economic advantage of the communities and individuals likely to be involved in biodiversity conservation activities. Engagement with regional landholders is made easier by the low proportion of LOTE speakers (Language other than English), but could be hampered by the relatively low levels of internet access.

Table 1 Alps Focal Region at a Glance

Variable	Unit	Alps Focal Region	Range across Regions SLAs	Victoria	NSW
Population					
Total population	no.	43,358	2,460 to 19,011	5,351,226	6,958,812
Average annual population change 2001-2011	%	-0.1	-0.7 to 2.0	1.5	0.9
Population median age	years	39	29 to 48	37	38
Change in median age	years	+ 4	-2 to + 8	+ 2	+ 3
Population sex ratio (males to females)	%	114.9	97.6 to 128.4	96.5	97.0
Young persons (15-24 years of age)	%	16.0	9.7 to 23.9	13.7	13.0
Percentage change in number of young persons 2001-2011	%	1.4	-7.7 to 76.3	13.8	5.3
Indigenous people as proportion of total population	%	0.9	0.4 to 2.4	0.7	2.5
Percentage of farmers/farm managers	%	3.1	14.3 to 0.0	0.7	0.7
Percentage change in number of farmers 2001-2011	%	-8.6	-2.8 to -29.8	-11.9	-9.3
Farmers/farm managers with different address 5 years ago	%	13.1	9.2 to 14.9	18.4	17.4
Farmers/farm managers' median age	years	57	55 to 59	54	55
Education					
Persons with a post-school qualification	%	38.3	28.6 to 48.6	36.7	36.6
Farmers/farm managers with a post-school qualification	%	38.1	36.0 to 41.8	37.9	40.5
Health					
Indirect standardised death rate , excluding alpine resorts (a)	x 1,000	5.4	4.1 to 5.8	5.7	5.7
Cultural diversity					
Persons who speak a LOTE at home	%	6.0	1.7 to 13.3	23.0	22.3
Work force					
Labour force participation rate	%	63.8	55.8 to 78.6	61.8	59.8
Unemployment rate	%	3.4	1.8 to 6.2	5.4	5.9
Youth (15-24 years of age) unemployment rate	%	6.8	3.9 to 13.5	12.0	12.8
Persons employed within AFF sector in 2011	%	8.7	4.6 to 39.5	2.2	2.2
Change in employment within AFF sector 2001-2011	%	-1.4	-4.8 to 0.4	1.3	1.2
Persons employed within AFS sector in 2011	%	15.3	5.3 to 24.8	6.1	6.7
Change in employment within AFS sector 2001-2011	%	-3.3	-6.0 to 1.9	0.3	0.0
Volunteerism (participated in voluntary work in last 12 months)	%	14.7	0.9 to 35.8	14.4	13.5
Income					
Annual average taxable income (b)	\$	45,990	43,418 to 48,340	55,986	59,782
Agricultural and tourism holdings					
Agricultural area of holding – average per agricultural business (c)	ha	569.5	140 to 948	389.6	1339.6
Farm equity ratio - average per farm (d)	%	94.0	na	90.8	86.7
Off-farm income - average per farm (d)	\$	45,482	na	34,736	35,180
Tourism establishments (e)	no.	2,265	na	72,956	97,833
Visitors and expenditure (e)	no. (M\$)	4,547,000 (M\$1,266)	na	na	na
Physical infrastructure					
Building approvals per 1,000 population (b)	x 1,000	3.4	0 to 8.2	11.3	4.8
Home ownership	%	62.4	21.2 to 72.3	67.5	63.8
Internet access	%	66.2	60.2 to 70.3	76.9	76.3
Socio-economic disadvantage					
Low income households	%	1.4	0 to 1.9	1.6	1.4
Low income households with mortgage stress (f)	%	10.1	0 to 16.5	11.4	11.1
Low income households with rental stress (f)	%	14.7	0 to 28.3	25.1	26.3
Index of relative socio-economic disadvantage (g)	score	999	956 to 1060	na	na

Sources: 2001, 2006 and 2011 Censuses of Population and Housing, (ABS 2012), except

(a) Deaths, Australia (ABS 2011)

(b) ABS National Regional Profile 2006-2010 (ABS 2011b)

(c) ABS Agricultural Census 2010-2011 (ABS 2011c)

(d) ABARES Australian Farm Survey 2010-11 to 2012-13, NSW Tablelands and Southern and Eastern Victoria (ABARES 2012)

(e) Regional Tourism Profile 2011-12 for Murray East & High Country (Victoria), & Snowy Mountains (NSW) tourism regions TRA 2012)

(f) PHIDU 2012 & (g) PHIDU 2006

na =Not applicable/Not available. LOTE = Language other than English

1. Introduction

1.1. Background and purpose

The Landscapes and Policy Hub established under the Australian Government's National Environmental Research Program (NERP), is one of five multi-institutional research hubs established to 'provide robust science that is essential for managing the sustainability of Australia's environment' (DSEWPaC 2011). The hub comprises a team of researchers from the University of Tasmania, the Antarctic Climate & Ecosystems Cooperative Research Centre, Australian National University, Murdoch University, Griffith University and Charles Sturt University. The aim of the hub is to develop tools, techniques and policy options that enable biodiversity to be considered at landscape scale. The Hub is focussing on two study areas: the Tasmanian Midlands and the Australian Alps.

The Australian Alps extend over 500 kilometres from the Brindabella Ranges in New South Wales (NSW), through the Namadgi National Park in the Australian Capital Territory to the Snowy Mountains (NSW) and the Victorian Alps. The Australian Alps are known for their rich biodiversity, geodiversity, heritage and scenic values. These values have been acknowledged through National Heritage listing and recognition as a National Landscape (AALC 2011). The region also contains two internationally significant wetland sites and many endemic and threatened fauna and flora and associated ecological communities. Much of the alps region is public land, the bulk of which is managed as protected area under state and territory legislation. The eleven major protected areas in the alps are: in the ACT, Namadgi National Park and Tidbinbilla Nature Reserve; in NSW, Kosciuszko and Brindabella National Parks, and Bimberi and Scabby Range Nature Reserves; and in Victoria, Mt Buffalo, Alpine, Snowy River and Baw Baw National Parks, and the Avon Wilderness Park. Adjacent to these reserves are state forests and private lands, the latter being primarily located in lower-elevation valleys surrounding the high country.

This report contributes to the Landscapes and Policy Hub by providing a socio-economic profile for areas encompassing the Australian Alps. The hub's Social and Institutional Futures Project is investigating the social and institutional elements of these landscapes, with a particular focus on subalpine and alpine landscapes scattered through the Australian Alps. The elements used to frame this profile are based on previous research by Curtis et al. (2003a), Webb et al. (2004) and ABS (2004). This profile is provided to help identify potential futures for the region and shape options for institutional, planning and management arrangements directed towards improving biodiversity outcomes.

1.2 Spatial delineation of the study region

This report presents data at the Statistical Local Area (SLA) level. There are 22 SLAs located within or partially overlapping the Australian Alps (one in the ACT, six in NSW and 15 in Victoria). It was beyond the scope of this report to cover all these SLAs. Seven were chosen based on the presence of important 'gateway' towns that provide services for tourists and recreationists accessing the largest areas of treeless subalpine and alpine landscape – Snowy River and Tumbarumba in NSW; Towong Pt B, Falls Creek Alpine Resort, Mount Hotham Alpine Resort, Alpine–East and Alpine–West in Victoria (Figure 1). The term 'Alps Focal Region' is used to refer to these seven SLAs.

1.3 Approach

The use of socio-economic data in environmental decision-making is identified by the ABS (2004) as playing an important role in:

- providing context to regional planning through enhanced understanding of baseline social conditions and processes which impact on a region's capacity for environmental action;
- enhancing understanding of the social impacts of particular interventions, noting that impacts can be positive or negative and unevenly distributed in a community;
- contributing to the monitoring and evaluation of the effectiveness of environmental interventions; and
- informing the assumptions that underpin major policy initiatives, particularly in relation to the decision making behaviour of individuals, families and firms.

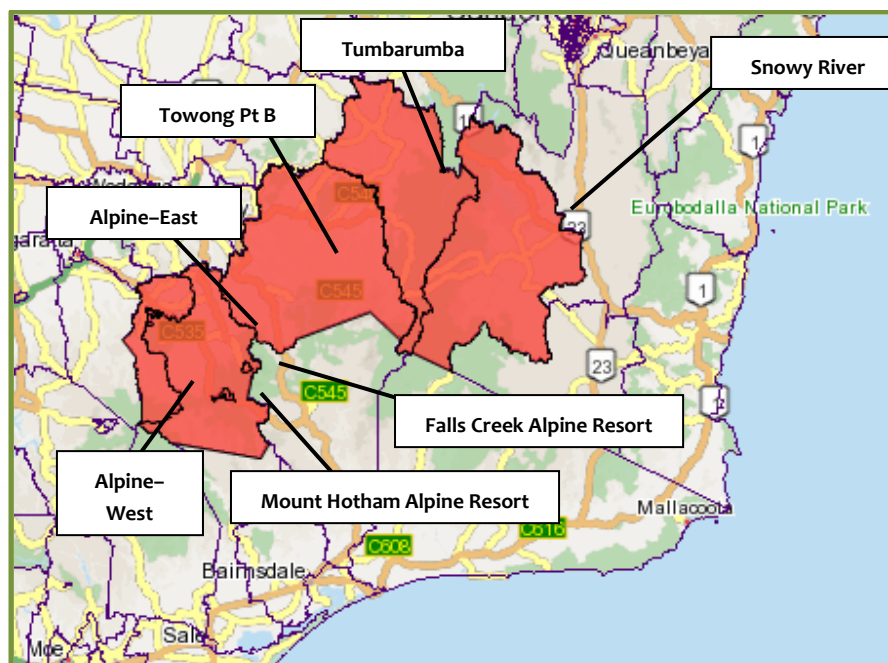


Figure 1 Alps Focal Region SLAs

Socio-economic data can be categorised into three types of capital (capacity): human capital, human-produced economic capital, and social and institutional capital (Webb et al. 2004). Human capital refers to the knowledge, skills and general ability of individuals through their leadership and problem solving, to contribute to the life of their community (Cocklin & Alston 2003). With respect to land management, human capital is important at several scales from individuals to regional communities. At the regional scale, the diversity of skills and abilities across the entire community will influence the community's capacity to adapt to change (Webb et al. 2004). Human capital also influences the likelihood and quality of stakeholder participation in environmental decision-making processes (Pretty 2003, Moore et al. 2006). Human-produced economic capital is generated via economic activity through human ingenuity and technological change. It refers to commodities brought into existence through human endeavour (Webb et al. 2004). Included are products that have been harvested or manufactured, the built environment (including dwellings, other buildings, roads, railways and bridges) and financial resources (Curtis et al. 2003a). Cultural and intellectual property

are also forms of produced economic capital (Webb & Curtis 2002). This form of capital is a fundamental contributor to the well-being and capacity of regional communities (Webb et al. 2004).

In this report, based on the available data, the socio-economic profile for the Alps Focal Region addresses aspects of human and human-produced economic capital. An absence of suitable information on social capital has been addressed by including a section on social disadvantage, based on the interpretation that such measures of disadvantage are a reflection of a lack of social capital. A total of 37 variables were used to develop the socio-economic profile for the Alps Focal Region (Appendix 1). The choice of variables was informed by work conducted in the Murrumbidgee Valley by the Bureau of Rural Sciences (Curtis et al. 2003a), and reports on social and economic aspects of natural resource management by Webb et al. (2004) and ABS (2004). The secondary data sources used to construct the profile include the Australian Bureau of Statistics (ABS) 2001, 2006 and 2011 Population and Housing Census data, plus data sourced from the Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES), Public Health Information Development Unit (PHIDU) and Bureau of Tourism Research (BTR) – see Appendix 1.

Note that, given tourism significance of the region, there is a substantial non-resident population present in the alps for relative short periods. In addition, many people who value the alps only occasionally visit the region, or experience the area vicariously through books, films and so on. Census data therefore provides only a partial coverage of the key stakeholders.

Furthermore, the 2001, 2006 and 2011 censuses were conducted in early August. As these dates were during the ski season, which runs from early June until late September, a significant number of skiers and short-term workers associated with the ski industry would have been recorded in the census data. These data therefore include a significant number of non or temporary residents.

2. Population

In 2011, the Alps Focal Region census population was 43,358. The SLAs with the highest populations were Snowy River (19,011) and Alpine East (8,226). SLAs with the lowest populations were the two alpine resort SLAs of Mt Hotham (2,460) and Falls Creek (2,502) and the SLA of Tumbarumba (3,314) (Figure 2).

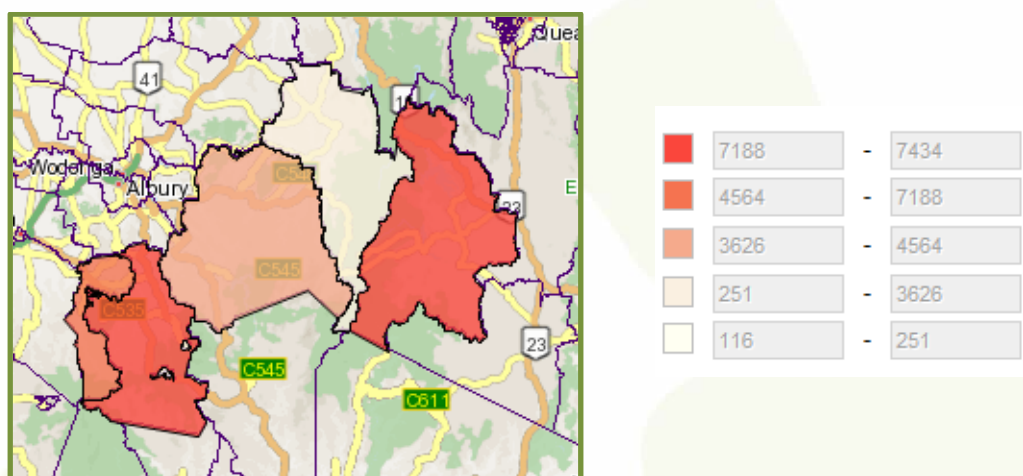


Figure 2 Distribution of population in Alps Focal Region, 2011

Between 2001 and 2011, the Alps Focal Region population decreased by an annual rate of 0.1% compared with a 1.5% annual growth rate for Victoria and a 0.9% annual growth rate for NSW (Appendix 2, Table A2.1). The highest annual population growth rates between 2001 and 2011 occurred within the Mt Hotham Alpine Resort (2.0% increase) and the Western most SLA of Alpine West (0.4% increase). The highest rates of population decline occurred in Falls Creek Alpine Resort (-1.4%) and the central SLA of Towong Pt B (-1.0%). Note that interpreting population data for the alpine resorts needs to take into account that, due to their small population bases, movements by relatively few people can have significant effects on the percentage changes over time.

There was also a trend for population losses across the younger age cohorts (<45 years) while population growth occurred in the older age cohorts (>44 years) (Figure 3). Between 2001 and 2011, the highest average annual population growth in the Alps Focal Region occurred in the 85 and over age cohort (4.6%), 65-74 year age cohort (4.2%) and 55-64 year age cohort (3.9%). The largest declines in the annual population of the region occurred in 25-34 year age cohort (-3.0%) 35-44 year age cohort (-1.7%) and both the 5-14 and 20-24 year age cohorts (-1.4%).

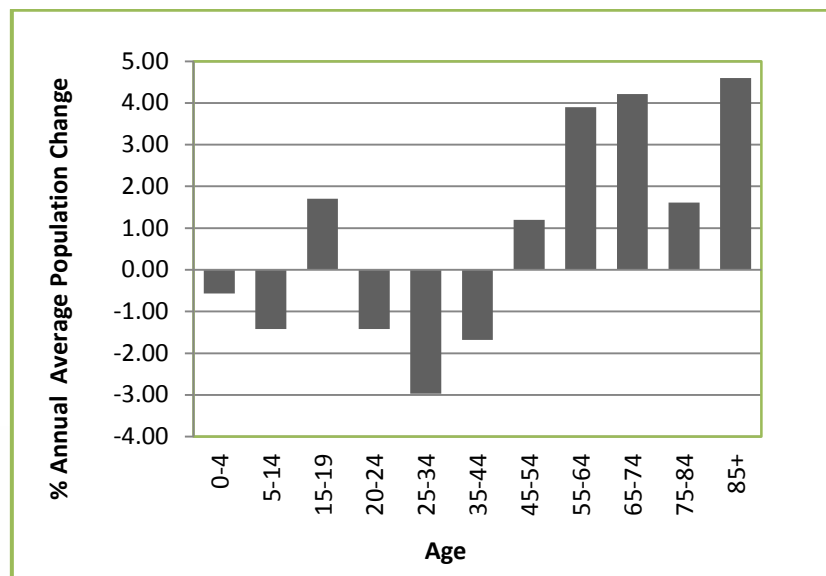


Figure 3 Percent average annual change in population in Alps Focal Region by age, 2001-2011

Each town or Urban Centre Locality (UCL) with 200 or more persons within the Alps Focal Region was classified as having experienced an increase, decrease or stagnant population trend. Following Curtis et al. (2003b), these distinctions were made on the basis that in the ten-year period between 2001 and 2011:

- there was an *increased* population trend when the population rose by more than 0.5% per year on average over the period;
- there was a *decreased* population trend when the population fell by more than 0.5% per year on average over the period; or
- the population trend was *stagnant* when the increase or decrease was less than 0.5% on average across the period.

A significant proportion (41.2%) of urban locality centres (ULCs) in the Alps Focal Region had small populations of between 200 and 999 people, with 71.4% of these towns experiencing an increase in population between 2001 and 2011 (Table 2). The highest annual population growth occurred in the Alpine East town of Dinner Plain (2.0%). The largest declines occurred in the Tumbarumba SLA town of Khancoban (-3.1%) and the Snowy River town of Berridale (-1.0%). Other decreases occurred in Corryong (-0.8%) in Tumbarumba, and Cooma (-0.7%) and Adaminaby (-0.6%) in Snowy River.

Table 2 Population trends in Alps Focal Region towns, 2001- 2011 (n=17).

Trend	Population Size				Total
	200-999	1,000-2,499	2,500-4,999	>5,000	
Increasing	5	2	1	0	8
	71.4%	33.3%	33.3%		47.1%
Stagnant	0	1	2	0	3
		16.7%	66.7%		17.6%
Decreasing	2	3	0	1	6
	28.6%	50.0%		100.0%	35.3%
Total	7	6	3	1	17
	41.2%	35.3%	17.6%	5.9%	100.0%

Rural balance populations (populations outside UCL boundaries) experienced either a stable or declining population between 2001 and 2011, except for Snowy River, which saw an increase of 5.9%. The largest decline in rural population occurred in the SLAs of Alpine East (-4.1%) and Towong Pt B (-1.0%).

In these rural populations, 14.3% of people identified themselves as farmers/farm managers. SLAs with the highest proportions of farmers/farm managers were Snowy River (24.1%), Towong Pt B (19.8%) and Tumbarumba (14.9%). The lowest proportions of rural farm/farm managers were in Alpine West (7.0%) and Alpine East (10.3%).

2.1 Age structure

In 2011, the median age of the Alps Focal Region population was 39 years (Appendix 2, Table A2.1). This median age is two years older than for Victoria (37 years) and one year older than NSW (38 years). SLAs with relatively high median ages included Towong Pt B (48 years), Alpine West (46 years) and Alpine East (45 years). Excluding the two alpine resorts, these SLAs comprise the western section of the Alps Focal Region. Areas with lowest median age were Mt Hotham Alpine Resort (29 years), Falls Creek Alpine Resort (30 years) and Snowy River in the east (34 years). These differences reflect the relative importance of the tourism and recreation sector compared with agriculture and forestry across the SLAs.

Since 2001, the median age of the Alps Focal Region population has increased by 4 years, from 35 years to 39 years. This is a larger increase than in Victoria (2 years) and NSW (3 years). Between 2001 and 2011, the SLAs with the highest median age also had the highest change in median age: Alpine East (8 years), Alpine West (7 years) and Towong Pt B (6 years). Mt Hotham Alpine Resort median age decreased by 2 years and there was no change at Falls Creek (Appendix 2, Table A2.1).

2.2 Sex ratio

In 2011, the Alps Focal Region population was comprised 20,157 females and 23,179 males (114.9 males per 100 females). This is considerably higher than the sex ratio of males to females for Victoria (96.5 males per 100 females) and NSW (97.0 males per 100 females).

The SLAs with the highest sex ratios were (see Appendix 2, Table A2.1 for full details):

- Mt Hotham Alpine Resort (128.4 males per 100 females)
- Snowy River (126.7 males per 100 females)
- Falls Creek Alpine Resort (121.8 males per 100 females).

The lowest sex ratios were:

- Alpine East (97.6 males per 100 females)
- Alpine West (101.6 males per 100 females)
- Towong Pt B (103.6 males per 100 females).

These differences are consistent with a relatively high proportion of younger males being present in those SLAs most strongly associated with winter tourism, and more females within an aging population in the agriculturally-focused SLAs. In considering the Alps Focal Region population by age and sex (Figure 4), the lowest sex ratios occurred in the 85 and over year cohort (64.2 males per females) and the 75-84 year cohort (100.9 males per females).

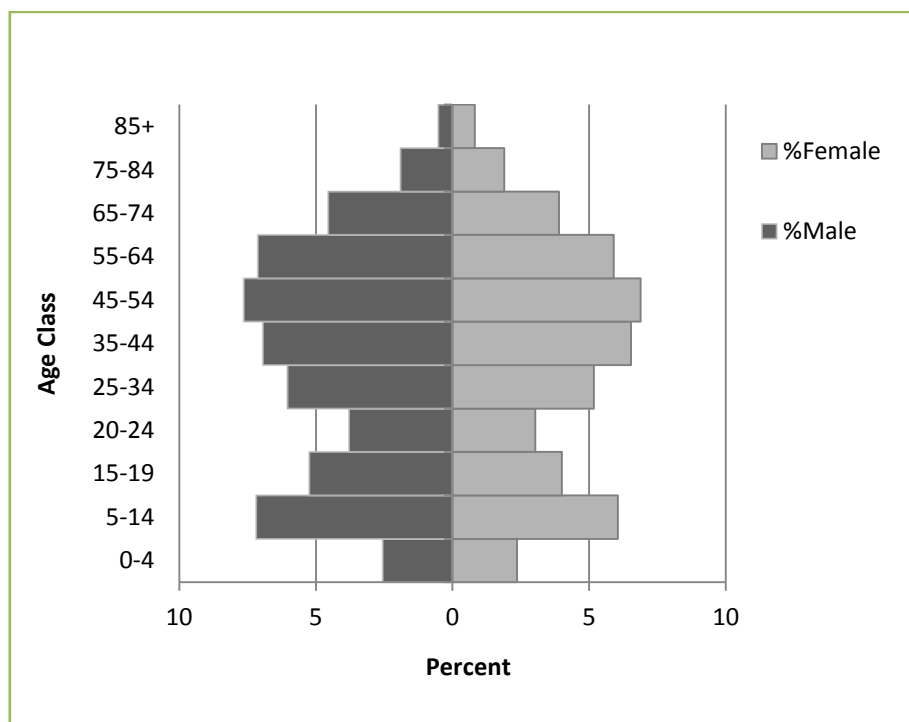


Figure 4 Alps Focal Region population by age and sex, 2011.

2.3 Number of youth

Youth numbers are an indicator of community viability and vitality - that is, the capacity of a place-based community to retain or attract young people. In 2011, 16% (6,958) of the population of the Alps Focal Region was 15-24 years of age. This is higher than Victoria's proportion of 14% and NSW's 13%. However, this result may be a consequence of censuses being conducted during winter when many young adults are in the region for the ski season. Youth as a proportion of the total population was highest in the alpine resort SLAs of Mt Hotham and Falls Creek, with 24% and 20.6% of the population being between the ages of 15 and 24 years respectively. The next highest SLA was Snowy River with 20.3%. The lowest concentrations of youth occurred at Towong Pt B (9.7%), Tumbarumba (9.8%) and Alpine East (10.1%) (Appendix 2, Table A2.1).

Between 2001 and 2011, there was a 1.4% increase in number of youth (from 6,863 in 2001 to 6,958 youth in 2011). This compares with increases in Victoria of 13.8% and NSW of 5.3%. The highest increase occurred in Mt Hotham Alpine Resort (76.3%) and Alpine West (12.6%). All of the other SLAs in the region had a decrease in the number of youth between 2001 and 2011, the largest decrease being for Tumbarumba (-7.7%) (Appendix 2, Table A2.1).

2.4 Indigenous population

In 2011, 0.9% of the Alps Focal Region's population identified themselves as being Indigenous. This is slightly higher than the Victoria's Indigenous population (0.7%) but lower than that for NSW (2.5%). The highest concentrations of Indigenous people occurred in the eastern SLAs of Tumbarumba (2.4%), Towong Pt B (1.1%) and Snowy River (0.8%). The lowest concentrations of Indigenous people occurred in the Alpine Resort SLAs of Falls Creek and Mt Hotham both with 0.4% (Appendix 2, Table A2.1).

2.5 Number, age and mobility of farmers/farm managers

In 2011, 3.1% (1,356) of the Alps Focal Region population identified themselves as being a farmer or a farm manager. This is above the average proportion of farmers and farm managers for Victoria and NSW (both 0.7%). The highest proportion of farmers/farm managers in the region occurred in Towong Pt B (14.3%). The lowest proportions of farmers/farm managers, excluding the alpine resorts that had zero, occurred in the SLAs of Snowy River (1.3%), Alpine West and Alpine East (both 3.0%). Between 2006 and 2011, the Australian Alps region farmer/farm manager population declined by 8.6%, which was lower than for Victoria (11.9%) and very similar to the decline in NSW (9.3%). The highest decreases in numbers of farmers/farm managers between 2006 and 2011 occurred in Alpine West (-29.8%), Tumbarumba (-10.6%) and Snowy River (-5.5%) (Appendix 2, Table A2.1).

In 2011, the median age of farmers/farm managers in the Australian Alps was 57 years, much higher than the 39 year median for the Alps Focal Region population, and 2-3 years older than the median age for farmers in Victoria and NSW. The SLAs with the highest median ages for farmers were Tumbarumba (59 years) and Towong Pt B (58 years). The lowest median age for farmers/farm managers was in Alpine East (55 years). There was no change in the overall regional median age between 2006 and 2011, compared with 2-year increases in Victoria and NSW. In 2011, 13.1% of farmers/farm managers in the region had a different address in 2006. This is lower than changes observed for Victoria (18.4%) and NSW (17.4%). The SLAs with the higher proportion of farmers/farm managers who changed addresses were in Alpine West (14.9%) and Towong Pt B (14.4%) (Appendix 2, Table A2.1).

2.6 Number of hospitality, retail and service managers

In 2011, 2.1% of the region's population identified themselves as being a hospitality, retail or service manager. This is similar to the percentages in Victoria (1.9%) and NSW (1.8%). The highest proportions of hospitality, retail or service managers were in Alpine East (3.3%) and Towong Pt B (2.2%). The lowest proportions of hospitality, retail or service managers were in Mt Hotham (0.4%) and Falls Creek (1.2%) Alpine Resorts (Appendix 2, Table A2.1). Total employment in the sector is considered in Section 6.5.

3. Education

Education data are overviewed in Table 1 and given by SLA in Appendix 2, Table A2.2.

3.1 Persons with post-school qualifications

In 2011, 38.3% of the Alps Focal Region population aged 15 years or older had a post school qualification. This is similar to the proportions for Victoria (36.7%) and NSW (36.6%). The highest proportions of people with post school qualifications were in the Alpine Resort SLAs of Mt Hotham (48.6%), Falls Creek (48.3%) and Snowy River (40.2%). Again, this is likely to be a consequence of the high proportion of younger and more wealthy people present in these SLAs during the census that coincided with the ski season. The lowest proportions were in Tumbarumba (28.6%), Alpine West (29.6%) and Towong Pt B (31.4%).

There was a 6% increase in the proportion of people with a post school qualification from 2001 to 2011. This is lower than the increases for Victoria (9.2%) and NSW (8.2%). The SLAs with the highest increases were Alpine East (11%) and Alpine West (9.3%) (Appendix 2, Table A2.2).

3.2 Farmers/farm managers with post-school qualifications

In 2011, 38.1% of people who identified themselves as farmers/farm managers in the region had a post school qualification. This is similar to both Victoria and NSW figures of 37.9% and 40.5% respectively. The proportion of farmers/farm managers with post-school qualifications was generally similar across the Alps Focal Region, ranging from 40.4% in Snowy River to 36.0% in Tumbarumba (Appendix 2, Table A2.2).

4. Health

The indirect (average) standardised death rate for the Alps Focal Region was 5.4 deaths per 1,000 persons. This is in slightly less than for Victoria and NSW (both 5.7 deaths per 1,000 persons). Highest regional death rates occurred in Towong Pt B (6.1 deaths per 1,000 persons) Alpine West (5.8 deaths per 1,000 persons) and Alpine East (5.7 deaths per 1,000 persons). Lowest rates occurred in Snowy River (4.1 deaths per 1,000 persons) and Tumbarumba (5.3 deaths per 1,000 persons). Data were not available for Mt Hotham and Falls Creek Alpine Resorts.

5. Cultural diversity

In 2011, 6.0% of the population in the region spoke a language other than English (LOTE) in their own home. This is considerably lower than the 23.0% average for Victoria and 22.3% for NSW. The highest proportions of LOTE speakers occurred in Alpine West (13.3%) and Mt Hotham Alpine Resort (6.7%) (Appendix 2, Table A2.2).

6. Work force

Work force data are overviewed in Table 1 and presented by SLA in Appendix 2, Table A2.3.

6.1 Labour force participation rate

In 2011, labour force participation in the region was 63.8%. This is slightly higher than the rates for Victoria (61.8%) and NSW (59.8%). The highest participation rates were in the two Alpine Resorts of Falls Creek (78.6%) and Mt Hotham (76.1%), as well as Snowy River (65.8%). The lowest labour force participation, and the only one below the NSW and Victoria figures, was Alpine West (55.8%).

6.2 Unemployment rate

In 2011, 3.4% of the region's labour force was unemployed. This is 2.1% less than for Victoria (5.4%) and 2.6% less than that for NSW (5.9%). The highest levels of unemployment were in Tumbarumba (6.2%), Alpine West (5.9%) and Towong Pt B (3.8%). The lowest levels were in Falls Creek Alpine Resort (1.8%) and Snowy River (2.6%).

6.3 Youth unemployment rate

In 2011, 6.8% of the labour force aged 15-24 years was unemployed. This figure is 5.2% lower than the Victorian youth unemployment rate (12.0%) and 6.0% lower than in NSW (12.8%). Tumbarumba (13.5%), Alpine West (11.9%) and Towong Pt B (9.6%) have the highest rates. Falls Creek Alpine Resort (3.9%) and Snowy River (6.0%) have the lowest rates. However, interpretation of these results needs to take into account the fact that the 2011 census was conducted during winter when many young adults have short-term employment in the region for the ski season.

6.4 Employment in the agriculture, fisheries and forestry sector

In 2011, 1,868 persons aged 15 years and over were employed within the agriculture, fisheries and forestry (AFF) sector, accounting for 8.7% of all employed persons in the region. This is four times the levels for Victoria (2.2%) and NSW (2.2%). Excluding the Alpine Resorts of Mt Hotham and Falls Creek, all SLAs were above the state averages. The highest levels of such employment were in Towong Pt B (35.2%) and Tumbarumba (25.7%). The lowest levels were in Snowy River (3.8%) and Alpine East (8.4%). The proportion of males (11.0%) is double the proportion of females (5.8%).

Between 2001 and 2011, the number of people working within the AFF sector in the region decreased by 1.4%. The largest declines in sectoral employment occurred in Tumbarumba (-4.8%), Towong Pt B (-4.3%) and Alpine West (-3.9%). These declines contrast with the increase in the state-wide figures for Victoria (1.3%) and NSW (1.2%).

6.5 Employment in the accommodation, food and service sector

In 2011, 3,279 persons aged 15 years and over were employed within the accommodation, food and service (AFS) sector, accounting for 15.3% of all employed persons within the region. This is more than double the levels for Victoria (6.1%) and NSW (6.7%). The highest levels of such employment were in Snowy River (18.8%) and the two Alpine Resorts, Mt Hotham (16.9%) and Falls Creek (19.4%). The lowest levels were in the three SLAs with the highest employment in AFF: Tumbarumba (4.6%), Alpine West (7.2%) and Towong Pt B (5.5%).

Between 2001 and 2011, the number of people working within the AFS sector in the region decreased by 3.3%. This contrasts with the state-wide trends for Victoria which increased by 0.3%, and NSW, for which there was no change. Although the average for the Alps Focal Region declined, Alpine West

experienced an increase in AFS workers of 1.9% between 2001 and 2011 and Towong Pt B no increase. The largest declines in employment within the sector occurred in Snowy River (-6.0%), Mt Hotham Alpine Resort (-2.5%) and Alpine East (-1.0%).

The proportion of males (13.0%) employed within the sector is less than the proportion of females (18.3%). This ratio is consistent with the corresponding figures for Victoria (5.1% males, 7.2% females) and NSW (5.8% males, 7.8% females).

6.6 Persons volunteering in last 12 months

In 2011, 14.7% of persons in the region undertook voluntary work for an organisation or group over the last 12 months. This is comparable with the levels for both Victoria (14.4%) and NSW (13.5%). The highest percentages of persons undertaking voluntary work were in Towong Pt B (35.8%) and Alpine East (23.3%). The lowest percentages were in the alpine resorts: Mt Hotham 0.9% and Falls Creek 2.3%. In 2011, 13.1% of the male population had volunteered in the last 12 months while 11.6% of females had volunteered.

7. Average annual taxable income

In 2009, the personal taxpayers within the Alps Focal Region had a mean taxable income of \$45,990, substantially lower than the means for the Victoria (\$55,986) and NSW (\$59,782). Tumbarumba (\$48,340) and Snowy River (\$47,831) recorded the highest mean taxable income for the region and Falls Creek Resort (\$46,907) and Alpine East (\$46,489) also had a mean taxable income higher than the regional mean. The lowest mean taxable income was in Towong Pt B (\$43,418) (Appendix 2, Table A2.4).

8. Agricultural holdings

In 2010 there were 1,271 agricultural businesses in the region with an estimated total area of 723,797 ha (average of 569.5 ha). The largest average was in Snowy River (948 ha) and the lowest in Alpine East (140 ha). This compares with the averages for Victorian and NSW of 389.6 ha and 1,339.6 ha respectively.

Of these businesses, 382 have an estimated 31,507 ha of land set aside for conservation, an average of 82.5 ha per property. The SLAs with the highest percentage areas set aside for conservation were Alpine West with 13.0% and Snowy River with 5.1%. The SLA with the lowest percentage for conservation was Towong Pt B with 2.5% (Appendix 2, Table A2.4).

In 2011, the mean broadacre farm equity ratio for the Tablelands (Northern Central and Southern) (containing the SLAs of Snowy River and Tumbarumba) and Southern and Eastern Victoria (containing the SLAs of Alpine East, Alpine West and Towong Pt B) were 94.0% and 95.0% respectively. This compares with 90.8% for Victoria and 86.7% for NSW. Between 2001 and 2011, the mean broadacre farm equity ratio in the Tablelands, and Southern and Eastern Victoria increased by 4.8% and 3.7% respectively.

In 2011, off-farm income in the broadacre regions of Tablelands and Southern and Eastern Victoria were \$58,662 and \$32,302 respectively. The average off-farm income for Victoria was \$34,736 and for NSW \$35,180. From the year 2001, there was an increase of \$32,383 in total off farm income in Tablelands and only a small increase of \$349 in Southern and Eastern Victoria. This compares with a \$561 decrease in Victoria and a \$6,650 increase in NSW.

9. Tourism establishments and expenditure

The Alps Focal Region intersects with three tourism regions: Murray East and High Country in Victoria, and the Snowy Mountains in NSW. In the tourism regions of Murray East and High Country in Victoria in 2011-2012, there were 415 and 1,263 tourism businesses respectively, including 87 hotels, motels or serviced apartments with 15 or more rooms. Combined, they account for 2.3% of tourism businesses and 10.7% of tourist accommodation establishments in Victoria. It is estimated that in 2011, there were 456,000 visitors to the Murray East and 2,724,000 to the High Country spending \$83 million and \$723 million respectively (Tourism Research Australia 2012).

In the Snowy Mountains Region in 2011-2012, there were 587 businesses accounting for 0.6% of all tourism businesses in NSW, including 65 hotels, motels or serviced apartments with 15 or more rooms. This accounted for 4.6% of accommodation establishments in NSW. A total of 1,367,000 visitors spent an estimated \$460 million in the Snowy River tourism region in 2011 (Tourism Research Australia 2012).

10. Physical infrastructure

10.1 Building approvals per 1,000 persons

In the region, there were 148 (3.4 per 1,000 people) building approvals in 2010. This compares with Victoria's total of 11.3 per 1,000 people and NSW's 4.8 per 1,000 people. The highest building approvals-population rates were in Alpine East (8.2 per 1,000 people), and Alpine West (4.4 per 1,000 people). Excluding the resort SLAs that had no building approvals, Snowy River (2.0 per 1,000 people) and Towong Pt B (3.2 per 1,000 people) had the lowest building approval-population rates (Appendix 2, Table A2.4).

10.2 Home ownership

In 2011, 12,033 households were either owned outright or being purchased, accounting for 62.4% of all households within the region. This level of home ownership was 5.1% lower than the Victorian mean (67.5%) and 1.4% lower than the mean for NSW (63.8%). The areas within the Australian Alps with the highest levels of home ownership were Alpine West (72.3%), Alpine East (69.3%) and Tumbarumba (68.1%). The areas with the lowest levels of home ownership were the two Alpine Resorts, Mt Hotham (21.2%), Falls Creek (35.6%) and Snowy River (49%) (Appendix 2, Table A2.4).

10.3 Persons with access to the internet at home

In 2011, a total of 6,993 people had internet access at their home in the region (66.2% of households). This is considerably lower than the figures for Victoria (76.9%) and NSW (76.3%). The highest percentages of the population with internet access at home occurred in the alpine resorts of Mt Hotham (88.9%) and Falls Creek (82.3) (Appendix 2, Table A2.4). The lowest percentages occurred in Snowy River (60.3%), Tumbarumba (65.6%) and Towong Pt B (66.5%). In the five-year period between 2006 and 2011, there was a 21.1% increase in the percentage of the region's population who had internet access at home. The SLAs with the highest increase during this five-year period were Snowy River with 22.3% and Alpine West with 21.3%. The lowest increases occurred in Alpine East (19.9%), Towong Pt B (19.6%) and Tumbarumba (19.0%).

11. Social disadvantage

The ability of land management agencies to engage with local communities is influenced by the levels of social capital in these communities (Morrison et al. 2011). Social capital includes trust, connectedness and leadership (Pretty & Ward 2001). Communities where these characteristics are particularly evident have been shown to be more responsive to environmental programs (Pretty 2003). However, the social capital of communities in and around the Australian Alps has not been formally documented. We have used available social disadvantage data as an indirect indication of the extent to which social capital may be underdeveloped in the Alps Focal Region.

11.1 Low income households

Low income households are those with a total gross weekly household income of \$300 or less (PHIDU 2012). In 2011, 150 households within the region were low income, accounting for 1.4% of all households. This is similar to the rate for Victoria (1.6%) and the same as for NSW. The highest percentages of low income households were in Tumbarumba (1.9%) and Towong Pt B (1.7%). Falls Creek and Mt Hotham Alpine Resorts did not record any low income households (Appendix 2, Table A2.5).

11.2 Housing stress

A family or individual is considered to be in mortgage or rental stress if they are in a low income bracket and pay more than 30% of their income on mortgage repayments or rental (PHIDU 2012). Acute mortgage stress occurs when 50% of income is spent on mortgage repayments or rent. In 2011, 10.1% of low income families were experiencing mortgage stress in the region. This is very similar to the percentages for Victoria (11.4%) and NSW (11.1%). The SLAs with the highest percentages of mortgage stress were Towong Pt B (16.5%) and Alpine East (15.0%). There were no records of mortgage stress in Falls Creek or Mt Hotham Alpine Resorts (Appendix 2, Table A2.5).

In 2011, 14.7% of low income households in the region were experiencing rental stress. This is considerably lower than the percentages for Victoria (25.1%) and NSW (26.3%). The highest incidence of rental stress was in Alpine West (28.3%) and Alpine East (24.1%). There were no records of rental stress in Falls Creek Alpine Resort, and Mt Hotham Alpine Resort recorded 1.8% (Appendix 2, Table A2.5).

11.3 Index of relative socio-economic disadvantage

The index of relative socio-economic disadvantage (IRSD) scores each SLA by summarising attributes of the population, such as low income, low educational attainment, high unemployment and jobs in relatively unskilled occupations. Its purpose is to provide a single score for the level of disadvantage of the population of an area. The index has a base of 1000 for Australia: scores above 1000 indicate relative advantage and those below, disadvantage (PHIDU 2006). In 2006, the average IRSD score for the Alps Focal Region was 999. The IRSDs for Victoria and NSW were 1000 and 1010 respectively. The highest IRSDs occurred in Snowy River (1060), Mt Hotham Alpine Resort (1050) and Alpine East (1010). The lowest IRSDs occurred in Alpine West (956), Falls Creek Alpine Resort (966) and Tumbarumba (967) (Appendix 2, Table A2.5).

12. Implications for biodiversity conservation

The Alps Focal Region population shares similarities in age profile, education, health and level of socio-economic disadvantage with the broader populations of NSW and Victoria. The median population age is similar for that for Victoria and NSW, as is the percentage of people with post school qualifications. The percentage of low income households and those experiencing mortgage stress is again similar for the Alps Focal Region and the two states. These similarities, with important exceptions that are explored below, suggest that policy initiatives likely to succeed with these broader populations have a similar chance of success in the Alps Focal Region.

Partnerships between government agencies, catchment management authorities and local landholders are driving progress in the conservation of biodiversity on private property. There are opportunities to establish similar partnerships between those government agencies responsible for managing alpine protected areas and stakeholder groups. Indeed partnerships have already been initiated, such as that between Parks Victoria and the Alpine Brumby Management Association for the management of feral horses. Partnerships are only one policy option. Given that the annual average taxable income is lower for the Alps Focal Region (\$45,990), relative to Victoria and NSW (\$55,986 and \$59,782 respectively) private landholders in the Alps Focal Region are likely to be amenable to financial incentives to enhance biodiversity outcomes.

The data indicate significance differences within the region between the Alpine Resorts, SLAs such as Snowy River that are strongly linked with alpine tourism, and Tumbarumba and Alpine-West that are more dependent on agriculture and forestry. Conservation engagement strategies need to take into account these differences, with media, messages and programs tailored to their varied employment dependencies, lifestyles and values. While residents in Snowy River and Alpine-East are likely to be the easiest to engage, the relatively high levels of employment, and the low level of volunteering in the former, suggest that their capacity to contribute may be limited. Tumbarumba and Alpine-West, on the other hand, have significant pools of unemployed people, particularly youth, and high levels of both socio-economic disadvantage and volunteer activity. These characteristics suggest that people in these SLAs could potentially be mobilised if suitable programs could be designed and resourced, particularly those that offer on-going employment opportunities.

The extent of agricultural lands and engagement in agriculture, fisheries and forestry suggests possibilities for on-farm and in-stream conservation, plus a continuing emphasis on biodiversity conservation in production forests, national parks and reserves, and on private lands reserved for conservation. The Alps Focal Region, relative to Victoria and NSW, has four times the number of people employed in agriculture, fisheries and forestry, at 8.7% of all employed persons in the region. This provides a potential workforce and interest in undertaking biodiversity conservation activities within the Alps Focal Region. Additionally, SLAs such as Alpine West with 13.0% of its area set aside for conservation, provide opportunities for ongoing biodiversity conservation efforts. Engagement with regional landholders is made easier by the low proportion of LOTE speakers, but could be hampered by the relatively low levels of internet access.

Rural landholders in the region have a high median off-farm income per farm compared to the state-wide figures. Only 14.3% of rural landholders self-identify as farmers or farm managers. Capacity for engagement and the willingness of private landholders to undertake work that has a substantial public benefit will vary according to interest, time and financial capability. Non-farmers are more likely to hold pro-conservation values and attitudes, but have less time and are less connected to conservation networks such as landcare (Curtis & Mendham 2011, Curtis & Race 2012). There are

opportunities and challenges here for conservation programs targeting rural landholders in the region, including those owing properties adjoining protected areas (which are likely to be more attractive to non-farmers). More work is needed to identify the characteristics of property owners on or near the boundaries with public protected areas, their current practices, motivations and aspirations.

The data provided in this report are illustrative of the state and national importance of tourism: the Victorian portion of the Alps Focal Region provides 10.7% of tourism accommodation in that state, while the NSW portion provides 4.6% of that state's tourism accommodation. In 2011, visitors to the Victorian portion of the Alps Focal Region were estimated at 3.18 million spending \$806 million. For the same year, the NSW portion received an estimated 1.367 million visitors spending \$460 million. Finally, the proportion of the population employed within the accommodation, food and service sector is double that for Victoria and NSW.

As such, the tourist industry, its employees, customers and investors are key players in the future of biodiversity conservation in the Australian Alps. The industry provides opportunities for partnerships, continuing improvement in environmental performance (as illustrated by the Environmental Management Systems being implemented by a number of the resorts – see OEH NSW (2011) for details), and person power in the form of both employees and customers to support and implement biodiversity initiatives.

Although agriculture and tourism are important sectors, the numbers employed in these sectors have declined over the period 2001 to 2011 in contrast to small state-wide increases. The declines in the numbers employed in agriculture and tourism (-1.4% and -3.3% respectively) contrast with small increases in both states (in agriculture: 1.3% for Victoria, 1.2% for NSW; in tourism: 0.3% for Victoria, no change for NSW). The decrease in numbers of farmers/farm managers was particularly marked in Alpine West. It is unclear the extent to which these declines have led to more properties being managed for purposes other than farming, or reflect a consolidation of smaller into larger farm properties. The region's population declined over the same period by -0.1% per annum, compared with annual growth rates of 1.5% per annum for Victoria and 0.9% per annum for NSW. Agriculture and tourism are key sectors for biodiversity conservation so these declines raise some cause for concern.

Although only a small proportion of the Alps Focal Region's population identified themselves as being Indigenous (0.9%), these people stand to make a very significant contribution to conservation in the Australian Alps. Representation of Indigenous interests and aspirations in the region is currently being strengthened by involvement of traditional owner reference groups in the management of protected areas across the Australian Alps, as well as within Falls Creek Alpine Resort. As a result, Indigenous culture and practices are expected to have a greater influence on public land management in the region, and employment opportunities are likely to be enhanced.

The Alps Focal Region has SLAs with an index of relative advantage and others with an index suggesting relative disadvantage. This variability in socio-economic (dis)advantage across the Alps Focal Region suggests that within the region there is an associated variability in the ability of persons and associated communities to respond to challenges and to commit to enterprises, such as biodiversity conservation, that may have limited immediate economic returns to individuals. This variability emphasises the importance of considering a variety of carefully tailored approaches based on the relative socio-economic advantage of the communities and individuals likely to be involved in biodiversity conservation activities.

13. References

- AALC (2011) *Annual Report, 2010-2011*, Australian Alps Liaison Committee, Canberra.
- ABARES 2013, *Australian Farm Survey Results, 2010-11 to 2012-13*, Australian Bureau of Agricultural and Resource Economics and Sciences, Canberra, <www.daff.gov.au/abares/publications_remote_content/publication_series/farm_survey_results>.
- ABS (2004) *Measuring Social Capital: an Australian Framework and Indicators*, viewed October 2012, Australian Bureau of Statistics, Canberra, <[http://www.ausstats.abs.gov.au/ausstats/free.nsf/0/13C0688F6B98DD45CA256E360077D526/\\$File/13780_2004.pdf](http://www.ausstats.abs.gov.au/ausstats/free.nsf/0/13C0688F6B98DD45CA256E360077D526/$File/13780_2004.pdf)>.
- ABS (2011a) *Deaths, Australia*, ABS Catalogue No. 3302.0, Australian Bureau of Statistics, Canberra.
- ABS (2011b) *National Regional Profile 2007-2011*, viewed October 2012, Australian Bureau of Statistics, Canberra, <http://www.ausstats.abs.gov.au/ausstats/nr_pmaps.nsf/NEW+GmapPages/national+regional+profile>.
- ABS (2011c) *Agricultural Census, Agricultural Commodities, Australia 2010-2011*, ABS Catalogue No. 71210.0, Australian Bureau of Statistics, Canberra.
- Cocklin C & Altson M (eds) (2003) *Community Sustainability in Rural Australia: a question of capital?* Academy of the Social Sciences in Australia, Canberra.
- Curtis A, Herreria E & Kelson S (2003a) *Murrumbidgee Valley Socio-Economic Profile*, Bureau of Rural Sciences, Canberra.
- Curtis A, Magpantay C, Kelson S & Charalambou C (2003b) *Small Towns: Population Trends 1991-2001*, Bureau of Rural Sciences, Canberra.
- Curtis A & Race D (2012) Management of riparian zones by rural landholders, in Lefroy EC, Curtis A, Jakeman A & McKee J (eds) *Landscape logic: Integrated Science for Landscape Management*, CSIRO, Melbourne.
- Curtis A & Mendham M (2011) Bridging the gap between policy and management of natural resources, in Pannell D & Vanclay F (eds), *Changing Land Management: adoption of new practices by rural landholders*, CSIRO, Melbourne.
- DSEWPaC (2011) *NERP Program Overview*, viewed October 2012, Department of Sustainability, Environment, Water, Population and Communities, Canberra, <www.environment.gov.au/nerp>.
- Moore SA, Severn RC & Millar R (2006) A Conceptual Model of Community Capacity, *Geographical Research* 44(4): 361-371.
- Morrison M, Oczkowski E & Greig J (2011) The primacy of human capital and social capital in influencing landholders' participation in programmes designed to improve environmental outcomes, *Australian Journal of Agricultural and Resource Economics* 55: 1-19.
- Office of Environment and Heritage NSW (2011) *NSW Alpine Resorts Environment Report 2010-11*, Office of Environment and Heritage, Sydney.
- Pretty J (2003) Social capital and the collective management of resources, *Science* 302(5652): 1912-1914.
- Pretty J & Ward H (2001) Social capital and the environment, *World Development* 29: 209-227.
- PHIDU (2006) *Summary Measure of Disadvantage: Index of Relative Socio-Economic Disadvantage, 2006*, viewed October 2012, Public Health Information Development Unit, Canberra, <www.publichealth.gov.au/interactive_mapping/2012/notes/notes_d&s_IRSD.htm>.
- PHIDU (2012) *Low Income Households with Mortgage Stress, 2011*, viewed October 2012, Public Health Information Development Unit, Canberra, <www.publichealth.gov.au/interactive_mapping/2012/notes/notes_d&s_mortgage_stress.htm>.
- Tourism Research Australia (2012) *Regional Tourism Profiles 2011/12*. Department of Resources, Energy and Tourism, Canberra.
- Webb TJ & Curtis A (2002) *Mapping Regional Capacity: a method to map regional capacity to adopt more sustainable natural resource management practices*, Report to Land & Water Australia, Bureau of Rural Sciences, Canberra.
- Webb T, Cody, K, Harrison, B, Sincock A & Mues C (2004) *Social and Economic Information for NRM: an initial discussion paper*, National Land & Water Resources Audit, Canberra.

Appendix 1 Profile variable descriptions

Variable	Unit	Source	Definition	Geography	Time-series
Population					
1. Number of persons	Number (no.)	2011 Census of Population and Housing, ABS	Persons enumerated on Census night (place of enumeration).	SLA	2011
2. Population change 2001-2011	Percent (%)	2001, 2006, 2011 Censuses of Population% Housing, ABS	Average annual population growth rate between 2001 and 2011 (place of enumeration).	SLA	2001 2006 2011
3. Median age of total population	Years	2011 Census of Population and Housing, ABS.	The median age indicates the age at which half the population is older and half is younger.	SLA	2011
4. Change in median age of total population	Years	2001, 2006 2011 Censuses of Population% Housing, ABS	Difference between the median age of total population between 2001-2011.	SLA	2001 2006 2011
5. Population sex ratio	Percent (%)	2011 Census of Population and Housing, ABS	Number of males per 100 females expressed as a percentage.	SLA	2011
6. Number of young persons aged 15-24 years	Percent (%)	2011 Census of Population and Housing, ABS	Number of persons aged 15-24 years.	SLA	2011
7. Change in the number of persons aged 15-24 years	Percent (%)	2001, 2006 and 2011, Censuses of Population% Housing, ABS	Percentage change in the number of persons aged 15-24 years between 2001-2011.	SLA	2001 2006 2011
8. Indigenous persons	Percent (%)	2011 Census of Population and Housing, ABS	Number of persons who identified themselves as being Indigenous as a percentage of the total population.	SLA	2001 2006 2011
9. Number of farmers/farm managers	Percent (%)	2011 Census of Population and Housing, ABS	Number of persons who identified themselves as being a farmer/farm manager as a percentage of the total population.	SLA	2011
10. Median age of farmers/farm managers by employment sector	Years	2011 Census of Population% Housing, ABS.	The median age indicates the age at which half property managers population is older and half is younger.	SLA	2011
11. Change in median age of farmers/farm managers by employment sector	Years	2001, 2006 and 2011 Censuses of Population% Housing, ABS	Difference between the median age of farmers/farm managers by employment sector between 2001-2011.	SLA	2001 2006 2011
12. Farmers/farm managers with different address 5 years ago by employment sector	Percent (%)	2011 Census of Population and Housing, ABS	Number of property who stated that their usual address was different 5 years ago expressed as a percentage of all property managers by employment sector.	SLA	2011

Variable	Unit	Source	Definition	Geography	Time-series
13. Number of hospitality, retail and service managers	Percent (%)	2011 Census of Population and Housing, ABS	Number of persons who identified themselves as being a hospitality, retail and service managers manager as a percentage of the total population.	SLA	2011
Education					
14. Persons with a post-school qualification	Percent (%)	2011 Census of Population and Housing, ABS	Number of persons with a post-school qualification as a percentage of total persons aged 15 years and over, excluding schooling up to Year 12.	SLA	2011
15. Change in persons with a post-school qualification	Percent (%)	2001, 2006 and 2011 Censuses of Population and Housing, ABS	Percentage change in persons with a post-school qualification between 2001-2011.	SLA	2001 2006 2011
16. Farmers with a post-school qualification.	Percent (%)	2011 Census of Population and Housing, ABS	The number of farmers with a post-school qualification as a percentage of total farmers.	SLA	2011
Health					
17. Indirect standardised death rate	Per 1,000	2011 Deaths Australia, ABS	This indirect method is used when the populations under study are small and the age-specific death rates are unreliable or not known.	SLA	2011
Cultural diversity					
18. Persons who speak a language other than English at home	Percent (%)	2011 Census of Population and Housing, ABS	The number of persons who speak a language other than English at home as a percentage of total persons.	SLA	2011
Work force					
19. Labour force participation rate	Percent (%)	2011 Census of Population and Housing, ABS	The percentage of the population aged 15 years and over who were in the labour force.	SLA	2011
20. Unemployment rate	Percent (%)	2011 Census of Population and Housing, ABS	The percentage of the labour force that were unemployed.	SLA	2011
21. Youth unemployment rate	Percent (%)	2011 Census of Population and Housing, ABS	The percentage of the labour force aged 15-24 years who were unemployed.	SLA	2011
22. Employment and change in employment within the agriculture, fisheries and forestry (AFF) sector by sex	Percent (%)	2001, 2006 and 2011 Censuses of Population and Housing, ABS	Change in the proportion of males, females and persons who were employed in AFF as a percentage of all employed males, females and persons.	SLA	2001 2006 2011
23. Employment and change in employment within the accommodation and food sector (AFS) by sex	Percent (%)	2001, 2006 and 2011 Censuses of Population and Housing, ABS	Number of males, females and persons who were employed in accommodation and food sector as a percentage of all employed males, females and persons.	SLA	2001 2006 2011

Variable	Unit	Source	Definition	Geography	Time-series
24. Persons who undertook voluntary work for a group or organisation	Percent (%)	2001, 2006, 2011 Census of Population and Housing, ABS	The number of people who use the have volunteered in the last 12 months as a percentage of the total population.	SLA	2001 2006 2011
25. Persons who undertook voluntary work for a group or organisation by sex	Percent (%)	2001, 2006, 2011 Census of Population and Housing, ABS	The number of males and females who have volunteered in the last 12 months as a percentage of the total population.	SLA	2001 2006 2011
Income					
26. Annual mean taxable income	\$	National Regional Profile 2006-2010, ABS	Total taxable income divided by the number of taxpayers.	SLA	2009
Agricultural and tourism holdings					
27. Agricultural area of holding	Percent (%)	2010-2011 Agricultural Census, ABS	Estimated average of total area of land operated per agricultural business.	SLA	2010-2011
28. Off-farm income (average per broadacre farm)	\$	Australian Farm Survey, ABARES	Estimated average of income from wages, other business, investment and social security payments received by the owner manager and spouse.	Broadacre Region	2010-2013
29. Farm equity ratio (average per broadacre farm)	Percent %	Australian Farm Survey, ABARES	Farm business equity as a percentage of owned capital.	Broadacre Region	2010-2013
201. Tourism establishments	Number (no.)	Regional Tourism Profile 2011-2012, BTR	Number of dwelling listed as 'Tourist accommodation', number of tourism businesses.	Tourism Region (TR)	2011-2012
31. Visitors and expenditure	Number (no.) and \$	Regional Tourism Profile 2011-2012, BTR	Number of Visitors and estimated expenditure.	Tourism Region (TR)	2011-2012
Physical infrastructure					
33. Building approvals per 1,000 persons	Per 1,000	National Regional Profile 2001-2010, ABS	The number of dwelling units approved during 2001-02 divided the population by 1,000 persons.	SLA	2010
33. Home ownership	Percent (%)	2011 Census of Population and Housing, ABS	The number of households being fully owned, being purchased, and being purchased under a rent/buy scheme as percentage of total households.	SLA	2011
34. Percentage of households with internet access	Percent (%)	2011 Census of Population and Housing, ABS	The number of households who have access to the internet at home as a percentage of the total population.	SLA	2011

Variable	Unit	Source	Definition	Geography	Time-series
Social disadvantage					
35. Low income households	Percent (%)	2011 Census of Population and Housing, ABS	The number of households with a weekly household income of \$300 or less as percentage of households with no members temporarily absent and all income stated. It refers to gross weekly household.	SLA	2011
36. Mortgage and rental stress	Percent (%)	PHIDU 2012	Low income families spending more than 30% of their income on rent or mortgage.	SLA	2011
37. Index of relative social disadvantage	Score	PHIDU 2006	Reflects the overall or average level of disadvantage of the population of an area. The index has a base of 1000 for Australia.	SLA	2006

Appendix 2 SLA data tables (sources as indicated in Appendix 1)

Table A2.1 Population

SLA	Number of persons 2011	Annual population growth rate 01-11	Sex ratio 2011	Indigenous people 2011	Median age, 2011	Change in median age 01-11	Proportion of youth (15-24 years)	Change in young persons 01-11
	No.	%	%	%	Years	Years	%	%
Alpine-East	8,226	-0.37	97.6	0.6	45	+8	10.1	-4.0
Alpine-West	4,489	0.40	101.6	1.0	46	+7	11.3	12.6
Towong Pt. B	3,356	-1.0	103.6	1.1	48	6	9.7	-1.8
Falls Creek AR	2,502	-1.4	121.8	0.4	30	0	20.6	-7.2
Mt Hotham AR	2,460	2.0	128.4	0.4	29	-2	24.0	76.3
Snowy River	19,011	0.14	126.7	0.8	34	+4	20.3	-2.7
Tumbarumba	3,314	-0.67	114.2	2.4	43	+3	9.8	-7.7
Focal Region	43,358	-0.1	114.9	0.9	39	+4	1.4	1.4

AR = Alpine Resort

Table A2.1 Population (continued)

SLA	HRS	FFMs	Change in FFMs 06-11	FFMs median age, 2011	FFM different address 5 years ago, 2011
	%	%	%	Years	%
Alpine-East	3.3	3.0	-4.9	55	9.2
Alpine-West	2.0	3.0	-29.4	57	14.9
Towong Pt. B	2.2	14.3	-2.8	58	14.4
Falls Creek AR	1.2	0.0	na	na	NA
Mt Hotham AR	0.4	0.0	na	na	NA
Snowy River	1.9	1.3	-5.5	57	13.3
Tumbarumba	1.8	7.6	-10.6	59	13.4
Focal Region	2.1	3.1	-8.6	57	13.1

AR = Alpine Resort; HRS = Hospitality, retail and service managers; FFMs = Farmers/farm managers

Table A2.2 Education

SLA	Persons with a post-school qualification, 2011	Change in % of persons with a post-school qualification, 01-11	Farmers with post-school qualifications, 2011	LOTE speakers
	%	%	%	%
Alpine-East	39.4	11.0	36.8	6.1
Alpine-West	29.6	9.3	41.8	13.3
Towong Pt. B	31.4	8.7	37.8	1.7
Falls Creek AR	48.3	6.8	0	6.5
Mt Hotham AR	48.6	-3.6	0	6.7
Snowy River	40.2	2.5	40.4	4.7
Tumbarumba	28.6	9.0	36	3.0
Focal Region	38.3	6.0	38.1	6.0

AR = Alpine Resort

Table A2.3 Work force

SLA	Labour force participation rate, 2011	Unemployment rate, 2011	Youth unemployment rate, 2011	Persons employed within AFF sector, 2011	Change in employed within AFF sector, 01-11	Persons employed within AFS sector, 2011	Change in employed within AFS sector, 01-11	Persons volunteering in last 12 months, 2011
	%	%	%	%	%	%	%	%
Alpine-East	59.8	3.6	6.4	8.4	-1.2	16.5	-1.0	23.3
Alpine-West	55.8	5.9	11.9	10.8	-3.9	7.2	1.9	21.1
Towong Pt. B	59.4	3.8	9.6	35.2	-4.3	5.5	0.0	35.8
Falls Creek AR	78.6	1.8	3.9	1.0	-1.3	19.4	-0.7	2.3
Mt Hotham AR	76.1	2.7	7.2	1.8	-0.4	16.9	-2.5	0.9
Snowy River	65.8	2.6	6.0	3.8	-0.8	18.8	-6.0	7.7
Tumbarumba	57.7	6.2	13.5	25.7	-4.8	4.6	-0.7	23.1
Focal Region	63.8	3.4	6.8	8.7	-1.4	15.3	-3.3	14.7

AR = Alpine Resort

Table A2.4 Income, agricultural holdings and physical infrastructure

SLA	Annual average taxable income, 2011	Agricultural holdings, 2010	Private land set aside for conservation, 2010	Building approval per 1,000 population, 2011	Home ownership, 2011	Internet access at home, 2011
	\$	ha	%	per 1,000	%	%
Alpine-East	46,489	30,428	3.6	8.2	69.3	70.3
Alpine-West	43,782	30,768	13.0	4.4	72.3	66.9
Towong Pt. B	43,418	284,665	2.5	3.2	73.9	66.5
Falls Creek AR	46,907	na	na	0.0	35.6	82.3
Mt Hotham AR	45,164	na	na	0.0	21.2	88.9
Snowy River	47,831	224,768	5.1	2.0	49.0	60.3
Tumbarumba	48,340	153,228	5.0	3.3	68.1	65.6
Focal Region	45,990	723,857	4.3	3.4	62.4	66.2

AR = Alpine Resort

Table A2.5 Socio-economic disadvantage

SLA	Low income households, 2011	Low income households with mortgage stress, 2011	Low income households with rental stress, 2011	Index of Relative Socio-economic Disadvantage, 2006
	%	%	%	
Alpine-East	1.1	15	24.1	1010
Alpine-West	1.3	14.8	28.3	956
Towong Pt. B	1.7	16.5	17.3	985
Falls Creek AR	NA	0	0	966
Mt Hotham AR	NA	0	1.8	1050
Snowy River	1.5	9.6	12.9	1060
Tumbarumba	1.9	14.9	18.7	967
Focal Region	1.4	10.11	14.7	999

AR = Alpine Resort

Hub Acknowledgements

The Landscapes & Policy Research Hub is supported through funding from the Australian Government's National Environmental Research Program and involves researchers from the University of Tasmania (UTAS), The Australian National University (ANU), Murdoch University and the Antarctic Climate & Ecosystems Cooperative Research Centre (ACE CRC), Griffith University and Charles Sturt University (CSU).

Scientific leadership and contributions are from a consortium of schools from these organisations including: UTAS Centre for Environment, UTAS School of Geography and Environmental Studies, UTAS School of Economics and Finance, Murdoch University School of Veterinary and Life Sciences, The ANU Fenner School of Environment & Society, ACE CRC Climate Futures, UTAS School of Zoology, UTAS School of Plant Science - Environmental Change Biology Group, Griffith University Griffith Climate Change Response Program and CSU Institute for Land and Water Society.



www.nerlandscapes.edu.au



National Environmental
Research Program

LANDSCAPES &
POLICY *hub*



Landscapes and Policy Hub