

The Distribution of Victoria's Sign Language Users

Analysis From The 2001, 2006 And 2011 Census

© 2013

Prepared for the Victorian Deaf Society by Dr Louisa Willoughby with the assistance of Ms Catherine Cook



*Communication
is the key*

The National Library of Australia Cataloguing-in-Publication entry

Author: Willoughby, Louisa.

Title: The distribution of Victorian sign language users
[electronic resource] : analysis from the 2001, 2006 and 2011
census / Louisa Willoughby.

ISBN: 978-0-949467-00-3

Subjects: Sign language--Statistics.
Deaf--Means of communication--Victoria--Statistics.
Victoria--Population--Statistics.

Dewey Number: **TO BE SUPPLIED**

This work is copyright. It may be reproduced in whole or part for studying or training purposes subject to the inclusion of an acknowledgement of the source and no commercial usage or sale. Reproduction for purposes other than those indicated above requires permission from the Victorian Deaf Society

Contents

List of Figures and Tables.....	2
Introduction	3
A note on data and terms.....	3
Key trends in community size, Victoria and Australia	5
Age distribution of sign language users.....	8
Geographic distribution of Victoria’s signing population	12
The Metropolitan Population	12
The regional population.....	14
Change from 2001 to 2011	17
Conclusion	19
Bibliography	20
Appendix 1: Sign Language Users and Total Population in the Melbourne Statistical Area, 2011	22
Appendix 2: Sign Language Users and Total Population outside the Melbourne Statistical Area, 2011	23
Appendix 3: Change in the Melbourne Statistical Area Populations, 2001-2011	25
Appendix 4: Change in the Non-Melbourne Statistical Area Populations, 2001- 2011	26

List of Figures and Tables

Table 1: Victoria Auslan users 2001-2011	5
Table 2: Australian sign language users 2001 to 2011.....	5
Table 3: Age profile of signing and general population - Victoria.....	8
Figure 1: Age profile of signing and general population – Victoria	9
Figure 2: Signing population per 10,000 of general population - Victoria	11
Figure 3: Signing Population distribution- Melbourne	13
Table 4: Top ten metropolitan signing populations by ratio in 2011.....	13
Figure 4: Signing Population Distribution- Victoria.....	15
Table 5: Top ten regional signing populations by ratio in 2011 (populations of 19 and over only)	15
Table 6: Top LGAs for increase in signers – 2001-2011.....	17

Introduction

This report outlines the age and geographic distribution of sign language users living in Victoria at the time of the 2011 census, and compares this distribution to reports from previous census. The report explores the distribution of population both within Melbourne and across regional Victoria and identifies a number of key trends in settlement patterns which have important consequences for service delivery.

A note on data and terms

Data in this report comes from the 2001, 2006 and 2011 Australian Census of Population and Housing (hereafter "the census"). Specifically, it relates to the question *Does the person speak a language other than English at home?*, and counts the number of people who said that at home they speak "Auslan" (Australian Sign Language), "sign language," or any other terms (such as ASL) that allowed the language to be identified as a Deaf sign language.

A particular advantage of census data for profiling the Deaf population is that the census is distributed to every household so it may uncover a number of sign language users who are not part of the Deaf community in their state. Census data also gives a way to quickly and easily count the number of sign language users living in a particular area and to compare their numbers with the number of people living in the general population. Yet despite these advantages, the phrasing of census questions and mode of data collection means that we must approach data on the distribution of the Victorian Deaf community with caution

As Ozolins and Bridge(1999, p. 8) note, underreporting of sign languages on Australian census forms is likely to be common because of the phrasing of the question respondents are asked – "does the person speak a language other than English at home?". Since sign languages are not spoken per se, it is reasonable to presume that many signers would not have listed their language in response to this question. Similar issues arise with the specification "at home", because many Deaf people who still live with their parents may use Auslan (or another sign language) as their preferred language but use English and lip reading to communicate with their hearing families. Kipp et al (1995, p. 26) have noted that the "at home" specification leads to speaker numbers being undercounted for most migrant languages, as large numbers of community members use English at home but their heritage language in a variety of other settings. This problem is more acute for Deaf individuals, however, because in over

90% of cases they are born into hearing families with no knowledge of Auslan.

While these factors may lead to the number of sign language users being undercounted, the absence of a question on hearing disabilities means there is no way of knowing how many sign language users are deaf themselves and how many are hearing family members who use Auslan in the home environment. These figures are thus not synonymous with the total number of Deaf Australians, although analysis of 2006 census data (Access Economics, 2008; Willoughby, 2011a) suggests that census figures provide a reasonably accurate profile of the adult Deaf community. The issue of the extent to which the census provides a reliable age profile of the Victorian Deaf community will be explored in more detail in the following section.

The reader also needs to be aware that in municipalities with very small signing populations (generally less than 7 people), the ABS will randomize data to ensure that confidentiality is preserved, making these figures unreliable. The numbers of sign language users may also be updated over time as the ABS conducts new parses¹ of Census data. The results presented here should thus not be seen as a final definitive statement as to the number of sign language users in a particular area, but do provide a clear estimate of population size. As with all statistics, reliability is also partly a question of the population group one has in mind or the purpose for which the statistics will be used. Thus the number of people using Auslan at home may be more or less than the number of people requiring regular access to Auslan interpreters or assistance from Deafness services. Home use of the language is, however, widely used as a measure of people's preferred language and gives the most accurate data currently available profiling the size of the Australian Deaf community.

¹ The ABS continually updates census data with the aim of better coding ambiguous or hard to read answers.

Key trends in community size, Victoria and Australia

The 2011 Australian census records 2,783 sign language users living in Victoria, and 9,720 for Australia as a whole. Table 1 outlines changes in the size and composition of the Victoria signing population from 2001 to 2011, compared to the total population:

	SIGNING	TOTAL	SIGNERS PER 10,000
2001	1,235	4,599,322	2.72
2006	2,098	4,880,903	4.32
2011	2,783	5,307,053	5.24

Table 1: Victoria Auslan users 2001-2011

Comparing the number of signers recorded in 2011 with those recorded in 2006 and 2001 uncovers several significant differences, which cannot be accounted for by natural growth alone. As Table 1 shows, the total number of signers more than doubled between 2001 and 2011. These increases are well above what could be expected from natural growth (especially since Johnston 2004 has hypothesised that the signing population in Australia is declining) and is likely a reflection of growing community pride in Auslan as a language and strong public awareness campaigns by Australian Deaf Societies since 2001 reminding members to list Auslan on the census.

Strong gains in the proportion of sign language users were also seen at the national level, as shown in Table 2:

STATE	SIGNERS 2001	SIGNERS 2006	SIGNERS 2011	INCREASE 2001-11
New South Wales	1,720	1,923	2,583	863
Northern Territory	51	55	72	21
Queensland	1,071	1,412	2,221	1,144
South Australia	427	602	847	420
Tasmania	219	190	293	74
Victoria	1,254	2,107	2,783	1,529
Western Australia	460	560	808	348
TOTAL AUSTRALIA	5,306	6,944	9,723	4,417

Table 2: Australian sign language users 2001 to 2011

According to census data, the number of people signing at home increased by 124% between 2001 and 2011. All states and territories recorded growth in their signing population in this period, but the increase occurred at different rates across states: Tasmania's growth is relatively low, with a growth rate of only 33% (and a loss recorded between 2001 and 2006) compared to more than doubling in Victoria and Queensland. Since 2006, Victoria has recorded a higher signing population than NSW, despite lagging that state in general population by nearly 1.6 million.

Queensland is also now home to a signing population numbering several thousand, only slightly smaller than the signing community in NSW despite a general population of 2.5 million fewer people.

One possible explanation for the strong state-based differences seen above is that they are the result of different opportunities to learn sign languages in each state. For example, in Queensland the number of children reportedly using Auslan at home virtually doubled between 2006 and 2011, during the period in which the Queensland government implemented the Transition to Auslan in Deaf education (see <http://education.qld.gov.au/studentservices/staff/workshops/auslan.html>)

. It seems highly likely that the Transition to Auslan program has thus had the effect of both motivating more families to use some Auslan at home and raising pride in the language, such that mothers, fathers and siblings of Deaf children are listing Auslan as a home language as well. The degree to which Auslan is used in education has varied quite markedly from state to state in Australia over the past 30 years (Komesaroff, 2008) and this may be influencing the degree to which young deaf children and their families are adopting Auslan from state to state and region to region. However, it should be noted that Johnston (2004) did not note widespread state differences in his comprehensive review of figures available on the number of Auslan users in Australia.

The rate of growth in the signing population between 2001-11 is too sharp to be accounted for solely by natural increase. When figures on Auslan use in the 2001 census were released, there was a strong feeling in the Deaf community that the census estimate was much too low, especially since previous estimates had often assumed a community size of between 9,000 and 15,000 (Flynn, 1987; Hyde & Power, 1992; Ozolins & Bridge, 1999). For the 2006 and 2011 censuses, the State Deaf Societies thus ran public awareness campaigns to get Deaf people to list Auslan on the census. In Victoria, this resulted in a particularly sharp increase in the number of sign language users between 2001-06, whereas in NSW and WA the greatest increase occurred between 2006-11. While these awareness campaigns were very much targeted at members of the Deaf community, they may have had a spillover effect of making hearing family members, Auslan interpreters and others with connections to the Deaf community more likely to list Auslan on the census as well. However, given that numbers are still quite similar to previous estimates of the size of community, it seems reasonable to assume that the majority of people listing Auslan on the census are in fact Deaf themselves.

In concluding this section, it should be noted that the apparent increase in the number of sign language users in census data should not be seen as negating Johnston's hypothesis that the number of native Auslan users is in decline. This seemingly contradictory trend can be explained if we consider the changing ways in which families and schools are using sign languages. For many years, advocates of oral communication for Deaf children have argued that using any sign language at all with a Deaf child would harm their development of speech. However, experience is showing many families that this need not be the case, and that there are benefits to using some signing alongside speech with their deaf children (Gregory, Bishop, & Sheldon, 1995; Meadow-Orlans, Mertens, & Sass-Lehrer, 2003). The idea that Auslan can be a useful resource for communication has also seen many schools with Deaf facilities offer Auslan as a LOTE for all students – whether Deaf or hearing – while at the same time often educating the deaf students primarily through oral English (see e.g. Department of Education and Early Childhood Development, 2012). In both cases, these trends give oral deaf children some access to Auslan, but do not lead to the development of fluency in the language in childhood. Whether these nascent Auslan users go on to develop strong fluency as adults will be down to a number of factors, including the difficulties they encounter using oral language in the workplace or higher education, exposure to the Deaf community and degree to which they adopt a Deaf identity.

Ultimately what is important for Deafness organisations to realise is that alongside recent increases in people claiming to use a sign language in national censuses, there is evidence that the population of Deaf people who do not use any oral language alongside a sign language is both declining and aging (Johnston, 2004). Since this has important implications for service demand and delivery, organisations would be well placed to monitor the demographic of the signing population in future censuses (and in other population surveys) ensure that this information is fed back into the strategic planning and policy development level of the organisation.

Age distribution of sign language users

In 2011, Victoria recorded 2,783 sign language users, out of a total state population of just over 5.3 million. This equates to an average of 5.24 sign language users per 10,000 Victorian residents. However, as will become clear, the proportion of sign language users varied markedly across different age groups.

In order to explore the age profile of the Victorian signing population, census data was first sub-divided into the following age groups:

- 0-14 (children)
- 15-24 (youth)
- 25-44 (younger working age)
- 45-64 (older working age)
- 65+ (seniors)

Both the general population and sign language users have a similar age profile: the largest age group is the 25-44 year olds, followed in both cases by 45-64 year old and 0-14 year olds in third place. The number of youths is larger than the number of seniors in the signing population, but marginally lower in the general population. Table 3 gives the number of people in each classification, and Figure 1 gives a visual representation of this data.

AGE GROUPS	SIGN LANGUAGE USERS		GENERAL POPULATION	
	#	%	#	%
0-14	614	22%	996507	19%
15-24	417	15%	720588	14%
25-44	959	35%	1530102	28%
45-64	634	22%	1322755	25%
65+	159	6%	737118	14%
TOTAL	2783	100%	5307070	100%

Table 3: Age profile of signing and general population – Victoria 2011

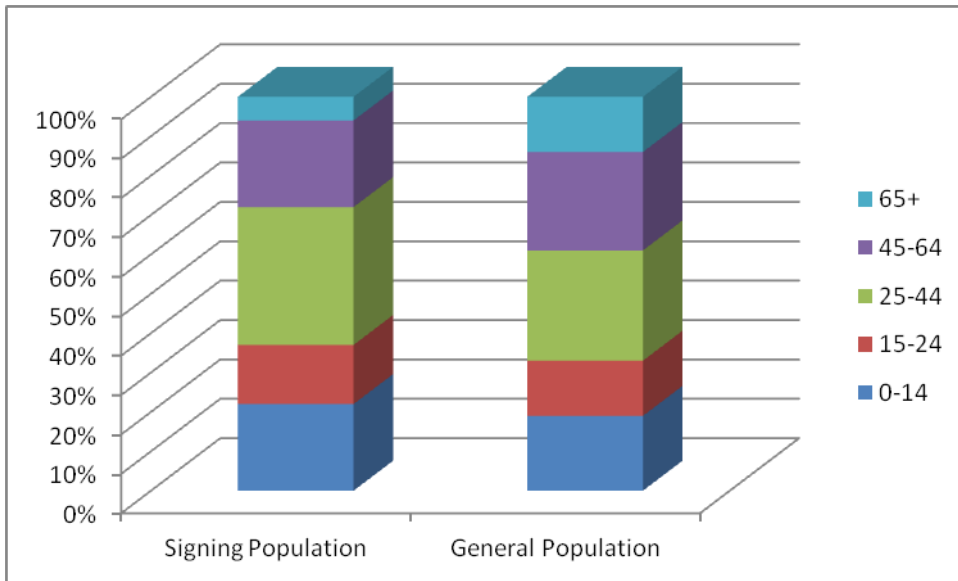


Figure 1: Age profile of signing and general population – Victoria 2011

Within Australia there is a commonly held view among researchers, professionals and members of the Deaf community that the number of Deaf people using Auslan as their sole or main form of communication is in decline. This is attributed to a number of related factors, including advances in hearing aid and cochlear implant technology that give users better access to speech, greater tendency towards mainstreaming Deaf and hard of hearing students, increasing use (and importance) of written English in electronic communication and a range of health measures (such as Rubella immunisation) that have seen fewer babies born with hearing impairments over the past 40 years (Johnston, 2004). As discussed in the previous section, this trend need not be seen to contradict data showing a growing number of sign language users and a relatively young community, as it may be the case that more people are now using Auslan alongside oral English, rather than making exclusive use of one or the other communication method.

The proportion of sign language users in each age bracket can look quite different to the spread of people across the general population and likely reflects both changing access to Auslan over time and idiosyncrasies of the data collection process. For the past three Australian censuses, the proportion of Auslan users aged 65+ in Victoria has been markedly lower than the proportion of people aged 65+ in the general population. While the senior signing population has increased slightly from 5% of Auslan users in 2001 to 6% in 2011, this is still well below the 14% of seniors in the general population. This may in part reflect the fact that older Deaf people would have been exposed to heavily oralist education, and thus may have had limited access to Auslan as children/ young adults. From

this they may have internalised a very negative attitude to Auslan making them less likely to adopt the language later in life, or to report using the language even if they regularly do so. Another pressing issue for this age group is that low literacy skills may have impeded their abilities to accurately complete their own census form. These seniors would have completed their schooling in or before the early 1960s, at a time when deaf education in Australia was rudimentary. Recent studies of the needs of Australian Deaf seniors have noted the difficulty members of this age group can have filling out even basic, Deaf-friendly survey documents (Matairavula, 2009; Willoughby, 2011b) and it is thus hypothesized that a number of older Auslan users may have relied on a family member to fill out the census form, who did not list Auslan as the senior's home language.

In 2001, 37% of Auslan users in Victoria were aged 25-44, whereas the corresponding proportion for the general population was 30%. This generation of speakers, born between 1957-76 in many ways represent a peak for Auslan in Australia: born at a time rubella epidemics had led to increased rates of congenital deafness they came of age at a time of growing Deaf pride and acceptance of the role sign languages might play in Deaf education (Ladd, 2003), and before technological changes such as cochlear implants or electronic communication began to lessen the involvement of some deaf people in the Deaf community. In 2011 the 24-45 generation is still slightly over-represented among Auslan users, however the difference is not so stark: 35% of Auslan users are in this bracket as opposed to 28% of the general population. One reason for this change of course is that in the intervening 10 years many from this generation have crossed over in to the next age bracket, and indeed the proportion of sign language users aged 45-64 has increased slightly from 20% in 2001 to 22% in 2011.

While the proportion of children and youth using Auslan is broadly in line with proportions in the general population, it seems likely that for this age group, as well as for the 25-44 age group there is some inflation due to the presence of signing families with both Deaf and hearing members. We have already discussed the issue that parents and siblings of Deaf children may list Auslan on the census, but the converse is also true, i.e. that Deaf adults will report (quite rightly) that their hearing CODAs (children of Deaf adults) use Auslan as a home language. Thus figures on the signing population of children are best read alongside information about the number of students currently enrolled in Deaf facilities or receiving support from a teacher of the Deaf.

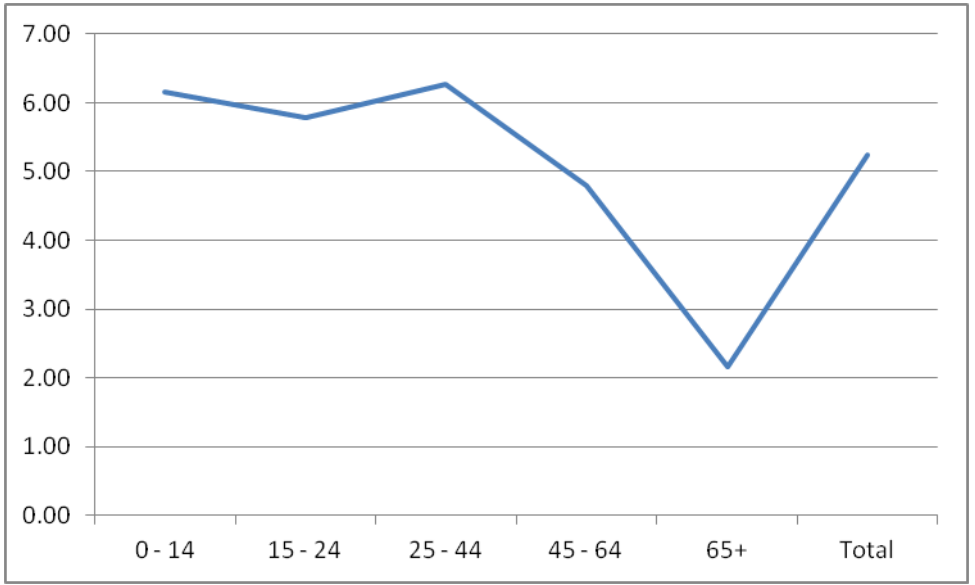


Figure 2: Signing population per 10,000 of general population – Victoria 2011

Geographic distribution of Victoria's signing population

Of the 2,783 people who reported using a sign language at home in 2011, 2098, or 75.4% live in the Melbourne statistical area. It might be thought that the increased ease with which interpreters and others services can be accessed in metropolitan areas would make sign language users more likely to live in Melbourne than members of the general population. Yet in fact the proportion of signers in Melbourne is only marginally above figures for the total population (73.8%).

Informal discussion with Vicdeaf case managers suggests many sign language users living in regional Victoria have been able to gain work as agricultural labourers and working in canneries, and these job opportunities (together with family support networks) may well act as a 'pull factor' encouraging deaf people to remain in regional areas despite problems of isolation and lack of access to services. As will shall see, the signing population in regional areas is also concentrated in certain regional centres. Geelong, Bendigo, Ballarat and Shepparton are home to sizeable signing communities (40+ signers). This section will outline current trends of where sign language users live in Melbourne and regional Victoria². Changes in distribution between 2001-11 will be explored in the following section.

The Metropolitan Population

in 2011, 2,098 signers lived in Melbourne. The signing population is concentrated in an arc through starting in the outer western suburbs, and heading through the mid northern and eastern suburbs as well as the outer south-east. Sign language users are conspicuously absent from inner Southern suburbs – Port Phillip, Stonnington, Yarra, Booroondura and Bayside all have less than 50 signers, which equates to less than 4.5 people for every 10,000 head of their total population. Figure 3 provides a visual representation of the distribution of Melbourne's signing population, while the full figures for each municipality are given in Appendix 1:

² In this report the boundaries used for the metropolitan population are those that correspond to the ABS "Greater Capital City Statistical Area", while the regional population is based on the ABS classification "Balance of State".

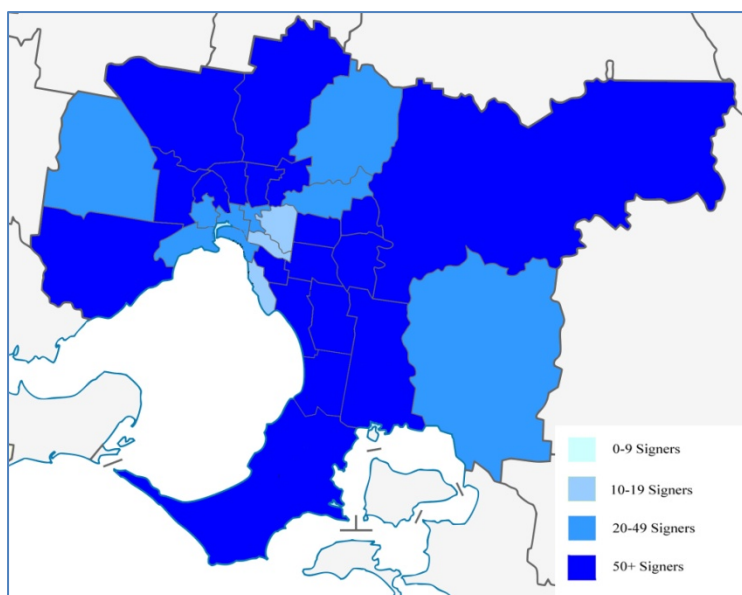


Figure 3: Signing Population distribution- Melbourne

In terms of raw numbers, Casey (214 signers), Whitehorse (125) Frankston (114) Wyndham (110) Banyule (106) and Maroodah (98) have largest signing populations however these figures need to be taken in context of the total size of the municipality (see table 4). Measuring sign language users in terms of their concentration per 10,000 head of total population shows that the municipalities with the highest concentration of signers is in fact Maroondah, with 9.6 signers per 10,000 residents. It is followed by Frankston, (9.1) Banyule (9 in 10,000), Casey (8.6 in 10,000) and Whitehorse (8.4 in 10,000).

LGA	SIGNING POPULATION	TOTAL POPULATION	SIGNERS PER 10,000 RESIDENTS
Maroondah	98	101,934	9.6
Frankston	114	125,123	9.1
Banyule	106	117,569	9.0
Casey	214	250,068	8.6
Whitehorse	125	149,684	8.45
Nillumbuk	47	59,084	8.0
Wyndham	110	160,097	6.97
Knox	101	147,456	6.9
Darebin	89	135,559	6.6
Kingston	79	140,252	5.6

Table 4: Top ten metropolitan signing populations by ratio in 2011

Several factors appear to be at work in shaping the distribution of Melbourne's signing population. There is a clear trend that many of the

metropolitan municipalities with the lowest percentages of sign language users are among Melbourne's most expensive suburbs to rent or buy a home. Thus it seems reasonable to argue that Deaf people are in the main priced out of municipalities such as Melbourne, Yarra and Port Philip, preferring instead to settle in more affordable areas such as Wyndham and Casey.

The historical legacy of many of Melbourne's deafness services being located in the Eastern suburb (and particularly the City of Whitehorse) may have led to sign language users settling in that area in larger numbers. However, the growing communities in Frankston, Wyndham and Casey suggest that areas of new housing development are also proving very popular with sign language users. Service providers will need to watch this apparent demographic shift with interest and may wish to start thinking already about the best way to reach a community that is increasingly living in suburbs distant from (and poorly connected to) the city centre.

The regional population

In 2011, 685 signers lived in regional Victoria. The signing population is largely concentrated in a handful of municipalities. Of 48 Local Government Areas (LGAs), 14 have no signing residents at all, while 20 have 10 or more sign language users. As might be expected, Victoria's two largest regional municipalities – Greater Geelong and Greater Bendigo – also lead regional areas in the number of signers (111 and 80 respectively) while the number 3 and 4 spots for sign language users are taken by the fifth and third largest regional LGAs – Ballarat (55 signers) and Shepparton (42 signers). Figure 2 outlines the distribution of Victoria's regional signing population, while the full figures for each municipality are given in Appendix 2:

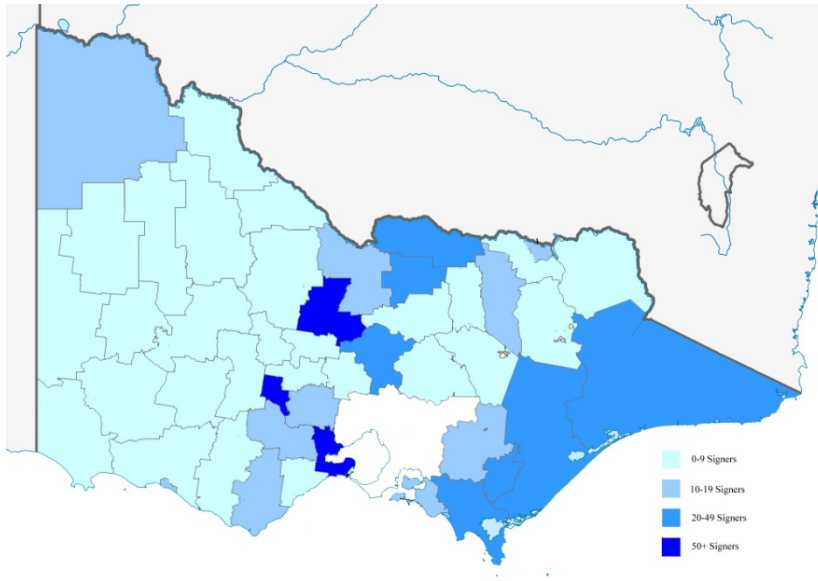


Figure 4: Signing Population Distribution- Victoria

Aside from the municipalities with a high number of signing residents, mention should be made of several regional municipalities where the proportion of signers in the total population is unexpectedly high. In Mitchell there are 11.1 sign language users for every 10,000 residents, while in Colac-Otway the figure is 9.6 per 10,000. Wellington (8.7 per 10,000) and Greater Bendigo (8.1 per 10,000) also report a high concentration of sign language users (see table 5). Mitchell, in fact, has the highest Auslan to total population ratio in Victoria. No reason for these increased rates is readily apparent, although Mitchell is adjacent to Greater Bendigo, so presumably the services and friendship of those major regional Deaf communities would at least be relatively accessible to signing residents of these shires.

LGA	SIGNING POPULATION	TOTAL POPULATION	SIGNERS PER 10,000 RESIDENTS
Mitchell	38	34,184	11.12
Colac-Otway	19	19,842	9.58
Wellington	35	40,127	8.72
Greater Bendigo	80	99,150	8.07
Moira	22	27,676	7.95
East Gippsland	32	41,597	7.69
South Gippsland	20	26,298	7.61
Greater Shepparton	42	59,448	7.06
Moorabool	19	27,751	6.85
Warrnambool	19	31,690	6.00

Table 5: Top ten regional signing populations by ratio in 2011 (populations of 19 and over only)

While the signing population of country Victoria tends to cluster in major regional centres, the Gippsland area proves an exception to this rule and creates a unique challenge for service delivery. Of the 111 signers living in the DHS Gippsland region, 32 live in East Gippsland (itself Victoria's second largest shire by area), 35 each live in Wellington, 24 in Latrobe and a further 20 live in South Gippsland (with sundry signers in Baw Baw and Bass Coast). This highly dispersed population creates difficulties when attempting to provide accessible deafness services, with distance often making it impractical (or at least incredibly costly) to arrange Auslan interpreters. The foundation of the Gippsland interpreter service has gone some way to alleviating these problems in recent years, however unmet demand and the tyranny of distance remains a real issue in this area. For all these reasons, Gippsland is an ideal area for organisations such as Vicdeaf to pilot initiatives aimed at improving service delivery for clients in regional areas.

Change from 2001 to 2011

In 2011, 2,783 Victorians indicated that they used a sign language at home on the census form, up from 2,107 in 2006 and 1,252 in 2001. As discussed early in the report, this growth rate (76% from 2001 to 2011) is taken to be the result of higher levels of reporting, rather than a large number of deaf people suddenly taking up sign language.

At the LGA level, 8 municipalities saw their number of signers increase by more than 50 people between 2001 and 2011. Of these, only the city of Greater Geelong is located outside the Melbourne statistical area. In regional areas, growth in Ballarat (38) and Greater Bendigo (37) is also worthy of comment.

LGA	INCREASE IN SIGNERS 2001- 2011
Casey (C)	162
Maroondah (C)	70
Wyndham (C)	70
Greater Geelong (C)	70
Frankston (C)	60
Banyule (C)	54
Yarra Ranges (C)	53
Darebin (C)	52

Table 6: Top LGAs for increase in signers – 2001-2011

As Table 6 demonstrates, the municipalities that saw the greatest growth in their signing populations between 2001 and 2011 are by and large outer metropolitan LGAs. Wyndham and Casey have both seen large total population increases during this period (88% and 42% respectively), but it is important to note that growth in the signing population eclipses this natural growth: in Casey the number of signers increased four-fold in the period while Wyndham's signing population increased from just 40 in 2001 to 110 in 2011. LGAs such as Maroondah, Yarra Ranges, Banyule, Frankston and Darebin also saw their signing populations double or even triple during this period despite experiencing total population growth of between 3-14%. Analysis of the 2006 census noted that Melton had largely been avoided by sign language users (Willoughby, 2009). While the proportion of signing residents in Melton, and also Hume and Whittlesea remains below the state average (see Appendix 1), all three municipalities saw growth of around 30 signers between 2001-2011. This may be the start of a trend towards a larger Deaf community in the western suburbs of Melbourne, but the eastern and south-eastern suburbs continue to attract the majority of Melbourne's signers.

In regional Victoria, many LGAs in the west of the state saw sharp declines in the total population between 2001-2011, but this did not affect the already small signing population in those regions. In 2001 Greater Bendigo and Greater Geelong were the only regional LGAs to have a signing population of more than 20 people (43 and 41 respectively). Thus all regional LGAs with significant signing populations have seen these develop (or at least get reported on the census) since 2001. These growing regional communities suggest there will be strong demand for deafness services in regional Victoria for many years to come, and attest to the utility of interventions such as the Video Relay Interpreter service.

Conclusion

This report has shown that the number of people in Victoria indicating they spoke a sign language increased markedly between the 2001 and 2011 censuses. In both years, the signing population was concentrated in Greater Melbourne, but not markedly more so than the Victorian population as a whole. Within Melbourne, sign language users are increasingly settling in outer suburbs, with the Pakenham-Cranbourne growth corridor proving particularly popular. Deaf agencies are thus well advised to monitor this shifting population trend as current rates suggest a high demand for service delivery in Auslan in the outer suburbs in future.

Outside of Melbourne the signing population more than doubled between 2001 and 2011. The largest growth LGAs were in the regional centres of Greater Geelong, Ballarat and Greater Bendigo. However, it is important to note that the majority of regional municipalities have at least a handful of sign language users. Effectively providing services to this highly dispersed and often isolated population remains a key challenge for Victorian deafness services.

Bibliography

- Access Economics. (2008). Auslan interpreter services in Australia: supply and demand. A report commissioned by the Victorian Deaf Society (Vicdeaf). Melbourne: Access Economics.
- Department of Education and Early Childhood Development. (2012). Languages in Victorian Government Schools, 2011. Melbourne: Department of Education and Early Childhood Development. Retrieved from <http://www.education.vic.gov.au/Documents/school/teachers/teachingresources/discipline/languages/lotereport2011.pdf>
- Flynn, J. (1987). Sign language: Australian. In J. van Cleve (Ed.), *The Gallaudet Encyclopedia of Deaf People and Deafness* (pp. 56–8). New York: McGraw-Hill.
- Gregory, S., Bishop, J., & Sheldon, L. (1995). *Deaf young people and their families: Developing understanding*. Cambridge: Cambridge University Press.
- Hyde, M., & Power, D. (1992). The Use of Australian Sign Language by Deaf People. *Sign Language Studies*, 75, 167–82.
- Johnston, T. (2004). W(h)ither the deaf community? Population, genetics and the future of Australian Sign Language. *American Annals of the Deaf*, 148, 358–75.
- Kipp, S., Clyne, M., & Pauwels, A. (1995). *Immigration and Australia's language resources*. Canberra: Australian Government Publishing Service.
- Komesaroff, L. R. (2008). *Disabling pedagogy : power, politics, and deaf education*. Washington, DC: Gallaudet University Press.
- Ladd, P. (2003). *Understanding deaf culture : in search of deafhood*. Clevedon: Multilingual Matters.
- Matairavula, K. (2009). *Deaf Seniors : A profile of Deaf seniors in New South Wales 2009 (full report)*. Sydney: The Deaf Society of New South Wales.
- Meadow-Orlans, K., Mertens, D., & Sass-Lehrer, M. (2003). *Parents and their deaf children*. Washington D.C.: Gallaudet University Press.

Ozolins, U., & Bridge, M. (1999). Sign language interpreting in Australia. Melbourne: Languages Australia.

Willoughby, L. (2009). The distribution of Victoria's signing populations: Analysis from the 1996 and 2006 Census. Melbourne: Victorian Deaf Society.

Willoughby, L. (2011a). Sign language users' education and employment levels: keeping pace with changes in the general Australian population? *Journal of deaf studies and deaf education*, 16(3), 401–413. doi:10.1093/deafed/enq067

Willoughby, L. (2011b). Aged care support for Deaf Victorians. Melbourne: The Victorian Deaf Society.

Appendix 1: Sign Language Users and Total Population in the Melbourne Statistical Area, 2011

AREA	AUSLAN	TOTAL	SIGNERS PER 10,000 RESIDENTS
Banyule	106	117,569	9.02
Bayside	19	89,877	2.11
Boroondara	39	156,665	2.49
Brimbank	69	181,965	3.79
Cardinia	26	72,833	3.57
Casey	214	250,068	8.56
Darebin	89	135,559	6.57
Frankston	114	125,123	9.11
Glen Eira	56	129,476	4.33
Greater Dandenong	69	135,307	5.10
Hobsons Bay	41	82,895	4.95
Hume	69	167,183	4.13
Kingston	79	140,252	5.63
Knox	101	147,456	6.85
Manningham	42	109,553	3.83
Maribyrnong	31	71,473	4.34
Maroondah	98	101,934	9.61
Melbourne	43	110,556	3.89
Melton	49	108,568	4.51
Monash	81	168,360	4.81
Moonee Valley	56	106,164	5.27
Moreland	62	145,982	4.25
Mornington Peninsula	54	140,114	3.85
Nillumbik	47	59,084	7.95
Port Phillip	37	91,521	4.04
Stonnington	17	92,682	1.83
Whitehorse	125	149,684	8.35
Whittlesea	51	153,994	3.31
Wyndham	110	160,097	6.87
Yarra	28	74,342	3.77
Yarra Ranges	76	141,860	5.36
TOTAL	2,098	3,918,196	5.35

Appendix 2: Sign Language Users and Total Population outside the Melbourne Statistical Area, 2011

AREA	AUSLAN	TOTAL	SIGNERS PER 10,000 RESIDENTS
Alpine	3	12,640	2.37
Ararat	0	10,968	-
Ballarat	55	92,405	5.95
Bass Coast	14	29,556	4.74
Baw Baw	13	41,792	3.11
Benalla	3	13,216	2.27
Buloke	0	6,241	-
Campaspe	16	35,567	4.50
Central Goldfields	0	12,239	-
Colac-Otway	19	19,842	9.58
Corangamite	3	16,002	1.87
East Gippsland	32	41,597	7.69
Gannawarra	3	10,080	2.98
Glenelg	0	18,975	-
Golden Plains	11	18,174	6.05
Greater Bendigo	80	99,150	8.07
Greater Geelong	111	207,614	5.35
Greater Shepparton	42	59,448	7.06
Hepburn	3	14,062	2.13
Hindmarsh	0	5,661	-
Horsham	9	18,997	4.74
Indigo	5	14,739	3.39
Latrobe	24	70,917	3.38
Loddon	5	7,296	6.85
Macedon Ranges	4	40,872	0.98
Mansfield	0	8,257	-
Mildura	15	50,949	2.94
Mitchell	38	34,184	11.12
Moira	22	27,676	7.95
Moorabool	19	27,751	6.85
Mount Alexander	9	17,208	5.23
Moyne	0	15,508	-
Murrindindi	5	12,681	3.94
Northern Grampians	6	11,736	5.11
Pyrenees	0	6,464	-
Queenscliffe	0	2,868	-
South Gippsland	20	26,298	7.61
Southern Grampians	0	16,162	-
Strathbogie	0	9,142	-
Surf Coast	4	25,199	1.59

Swan Hill	6	20,290	2.96
Towong	0	5,633	-
Wangaratta	10	26,410	3.79
Warrnambool	19	31,690	6.00
Wellington	35	40,127	8.72
West Wimmera	3	4,088	7.34
Wodonga	15	35,295	4.25
Yarriambiack	0	6,841	-
Unincorporated Vic	0	8,350	-
TOTAL	681	1388857	4.90
Strathbogie	0	9,142	-
Surf Coast	4	25,199	1.59
Swan Hill	6	20,290	2.96
Towong	0	5,633	-
Wangaratta	10	26,410	3.79
Warrnambool	19	31,690	6.00
Wellington	35	40,127	8.72
West Wimmera	3	4,088	7.34
Wodonga	15	35,295	4.25
Yarriambiack	0	6,841	-
Unincorporated Vic	0	8,350	-
TOTAL	681	1388857	4.90
Strathbogie	0	9,142	-
Surf Coast	4	25,199	1.59
Swan Hill	6	20,290	2.96
Towong	0	5,633	-
Wangaratta	10	26,410	3.79
Warrnambool	19	31,690	6.00
Wellington	35	40,127	8.72
West Wimmera	3	4,088	7.34
Wodonga	15	35,295	4.25
Yarriambiack	0	6,841	-
Unincorporated Vic	0	8,350	-
TOTAL	681	1388857	4.90

Appendix 3: Change in the Melbourne Statistical Area Populations, 2001-2011

	2001		2011		Increase	
	Signing Population	Total Population	Signing Population	Total Population	Signing Population	Total Population
Banyule	52	113,696	106	117,463	104%	3%
Bayside	18	83,504	19	89,858	6%	8%
Boroondara	20	148,532	39	156,626	95%	5%
Brimbank	32	162,931	69	181,896	116%	12%
Cardinia	8	45,305	26	72,807	225%	61%
Casey	52	175,505	214	249,854	312%	42%
Darebin	37	122,821	89	135,470	141%	10%
Frankston	54	109,808	114	125,009	111%	14%
Glen Eira	38	117,199	56	129,420	47%	10%
Greater	32	123,965	69	135,238	116%	9%
Hobsons Bay	13	80,120	41	82,854	215%	3%
Hume	34	131,182	69	167,114	103%	27%
Kingston	41	127,540	79	140,173	93%	10%
Knox	57	141,408	101	147,355	77%	4%
Manningham	18	107,079	42	109,511	133%	2%
Maribyrnong	16	59,406	31	71,442	94%	20%
Maroondah	28	96,132	98	101,836	250%	6%
Melbourne	10	65,617	43	110,513	330%	68%
Melton	13	51,685	49	108,519	277%	110%
Monash	63	155,061	81	168,279	29%	9%
Moonee Valley	23	100,743	56	106,108	143%	5%
Moreland	23	130,531	62	145,920	170%	12%
Mornington	16	124,891	54	140,060	238%	12%
Nillumbik	22	57,932	47	59,037	114%	2%
Port Phillip	10	78,227	37	91,484	270%	17%
Stonnington	20	86,090	17	92,665	-15%	8%
Whitehorse	90	139,549	125	149,559	39%	7%
Whittlesea	20	113,784	51	153,943	155%	35%
Wyndham	40	84,861	110	159,987	175%	89%
Yarra	19	67,052	28	74,314	47%	11%
Yarra Ranges	23	137,113	76	141,784	230%	3%

Appendix 4: Change in the Non-Melbourne Statistical Area Populations, 2001-2011

	2001		2011		Increase	
	Signing Population	Total Population	Signing Population	Total Population	Signing Population	Total Population
Alpine	0	0	3	12,640	-	-
Ararat	3	11,075	0	10,968	-100%	-1%
Ballarat	17	79,794	55	92,405	224%	16%
Bass Coast	0	23,970	14	29,556	-	23%
Baw Baw	4	34,632	13	41,792	225%	21%
Benalla	3	13,282	3	13,216	-	-
Buloke	0	6,961	0	6,241	-	-10%
Campaspe	9	34,551	16	35,567	78%	3%
Central	0	12,246	0	12,239	-	-
Colac-Otway	12	19,997	19	19,842	58%	-1%
Corangamite	0	16,554	3	16,002	-	-3%
East Gippsland	16	37,792	32	41,597	100%	10%
Gannawarra	0	11,377	3	10,080	-	-11%
Glenelg	0	19,248	0	18,975	-	-1%
Golden Plains	10	14,278	11	18,174	10%	27%
Greater	43	85,781	80	99,150	86%	16%
Greater	41	183,530	111	207,614	171%	13%
Greater	15	55,082	42	59,448	180%	8%
Hepburn	0	13,835	3	14,062	-	2%
Hindmarsh	0	6,256	0	5,661	-	-10%
Horsham	0	17,744	9	18,997	-	7%
Indigo	0	13,888	5	14,739	-	6%
Latrobe	15	66,819	24	70,917	60%	6%
Loddon	0	8,177	5	7,296	-	-11%
Macedon	7	35,552	4	40,872	-43%	15%
Mansfield	0	6,234	0	8,257	-	32%
Mildura	4	48,201	15	50,949	275%	6%
Mitchell	16	27,391	38	34,184	138%	25%
Moira	10	25,401	22	27,676	120%	9%
Moorabool	0	23,830	19	27,751	-	16%
Mount	6	16,141	9	17,208	50%	7%
Moyne	4	14,989	0	15,508	-100%	3%
Murrindindi	0	13,059	5	12,681	-	-3%
Northern	3	12,618	6	11,736	100%	-7%
Pyrenees	0	6,354	0	6,464	-	2%
Queenscliffe	0	3,068	0	2,868	-	-7%
South	0	24,524	20	26,298	-	7%
Southern	0	16,484	0	16,162	-	-2%
Strathbogie	5	9,119	0	9,142	-100%	-

Surf Coast	11	19,461	4	25,199	-64%	29%
Swan Hill	0	20,635	6	20,290	-	-2%
Towong	0	5,944	0	5,633	-	-5%
Wangaratta	0	25,606	10	26,410	-	3%
Warrnambool	0	28,572	19	31,690	-	11%
Wellington	16	39,158	35	40,127	119%	2%
West Wimmera	0	4,547	3	4,088	-	-10%
Wodonga	19	30,921	15	35,295	-21%	14%
Yarriambiack	0	7,737	0	6,841	-	-12%
Unincorporated Vic	4	7,638	0	8,350	-100%	9%