

Reflecting a Nation:  
Stories from the 2011 Census

# One hundred years of working on the census

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## The first national census

In April 1911, on a fine autumn Monday, census collectors set out all over Australia under mostly clear skies to begin gathering in Australia's first national census forms. They set out to cover inner-city slums and wealthy suburbs; rural towns and hundreds of miles of the outback. They travelled by bike or horse where they had the transport and needed to cover large areas, but mostly they travelled by foot. Some in Northern Queensland had to find their way through a flooded landscape while others in South Australia had difficulties finding water and fodder for their horses due to drought conditions. They had distributed the forms prior to census day: in the towns and cities up to four days before and in the country as early as two weeks before. The collection was expected to take a little longer, as in some cases the collectors would need to negotiate with the householders to ensure the cards were filled in correctly.



The Brisbane Courier 1 April 1911 p.13

However, the start of the collectors' work reflected several years of effort already put into the census by the staff of the commonwealth and state statistical agencies. The Commonwealth Bureau of Census and Statistics had been established only six years earlier with the appointment of the first Commonwealth Statistician, George Handley Knibbs. He in turn appointed a number of other staff, mostly selected from

the various state statistical bureaux. Together they worked on establishing statistics for all Australia. In 1907, they produced the first Year Book. They also began planning for the first national census.

From April to December 1909, Knibbs travelled to England and Europe (or 'home', as he and many others of his era described it despite being Australian born). There he investigated the best methods for running a census including the necessary equipment. He travelled to all the big European cities including several in Italy, Germany, Switzerland, France and England.

Knibbs spent considerable time while in Europe, investigating the amazing new-fangled machines that could sort and count information such as that collected in a census.

While in Europe, Knibbs spent considerable time investigating the amazing new-fangled machines that could sort and count information such as that collected in a census. These electrical tabulator machines were very much in vogue in the census offices in Europe and America before the First World War. However, Knibbs rejected them all. He felt that the time it would take to transfer the information from the census schedules to the punch cards, would cause too great a delay to the release of the data. Furthermore, he felt that because the population of Australia was small compared to the countries in Europe, the mechanical tabulators were not necessary.



State Library of Victoria, LaTrobe Picture Collection

*The Rialto Building in Collins Street, Melbourne*

Back in Australia, the practical work of developing and managing a census was underway. In the early days of the Commonwealth Bureau of Census and Statistics, the permanent staff of the Bureau consisted of the Statistician, several gentlemen to assist him, a number of young men who worked as clerks and a couple of boys who were messengers. A little later, a female typist joined. They worked in the old Rialto Building in Collins Street in Melbourne. In March 1910, the State Statisticians were asked to undertake the role of Supervisors for the census collection in their states.



*Permanent staff of the Commonwealth Bureau of Census and Statistics*

Some of the first workers hired specifically to work on the census were draftsmen. Drawing detailed maps of every part of Australia was essential to getting the collection right. But while the draftsmen drew the maps, local knowledge was used to divide the land into manageable collection areas. The State Supervisors were asked to appoint 'Enumerators'. These managed the collection at a district level. Enumerators were drawn from 'suitable' people such as police magistrates, town clerks, electoral returning officers, clerks of the courts and mining registrars from every local region in Australia. The enumerators were sent large maps of their areas and asked to divide them into collectors' districts. Once they had made their recommendations, the draftsmen then set to work again drawing, by hand, individual maps of every collector's district in Australia.

Collectors then needed to be appointed. In some states, police officers were used in the more remote areas. In suburban areas, civilian collectors were used. The local enumerator hired these based on the following criteria. The collector...

Must be a person of intelligence and activity, must neither be too young nor yet too old, must read and write well, and must be sufficiently healthy and strong to undergo the exertion of performing his task with promptness ([Endnote 1](#))

He also needed to not be prone to excessive drinking and to be polite and able to get people to respond positively to the census. He needed to know his district very well. In Australia, there seems to have been no thought of hiring women to be collectors (unlike in the United States in the 1920s).

From the first, collectors were required to make a declaration of secrecy, just as today they must respect the confidentiality of information supplied in the census. They also had to sign an undertaking that sounded vaguely similar to a police officer's or soldier's declaration.

- (a) That he would faithfully perform the duties of census collector.
- (b) That he would carry out...the instructions of the statistician...
- (c) That he would not desert from his duty... ([Endnote 2](#))

Collectors had to supply their own transport and cover any associated costs such as fodder and petrol. They were paid according to their method of transport. Collectors on foot were paid ten shillings a day, those on bicycle fifteen shillings a day and those on horse 20 shillings a day. Several of the State Statisticians made it clear in their reports that collectors on foot were likely underpaid given the difficulties of their tasks including the fact that they often had to work into the night to find householders at home. Police were also used in the days immediately following the census to get travellers, swagmen and campers to provide their information. Train conductors and ships' captains were also used as collectors in both this and several subsequent censuses, to cover people travelling overnight on census night.



To tabulate the census, a large number of additional temporary staff were required. These jobs seem to have been highly sought after, with a number of newspaper advertisements around the time offering training by private operators in how to succeed in obtaining such government jobs. To tabulate a census manually, a reasonable level of literacy was required, so applicants first needed to pass a test in maths, spelling and writing. Of over one thousand applicants, less than one quarter managed a score of more than 40% in the test. They were all hired. Office accommodation for the tabulators was limited in Melbourne so they were required to work in two shifts, one from 7:45am in the morning and the other starting at 3:30pm. Tabulators were paid on average ten shillings a day and up to fifteen shillings a day if they were a superintendent. Those aged under 21 years were paid five shillings and adult women were paid eight shillings.

As they did not use electrical tabulators, the bulk of the work of sorting and counting was done by hand-sorting and manual addition. However, some early mechanical calculating machines were used, particularly for adding.



Image by seventeenth  
Photo by Cameron Major

*This Millionaire calculating machine was used in the compilation of 1911 census results*

National Archives of Australia A3560. 5387



*The old Jolimont building, Alinga Street, Canberra, 1929*

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## Censuses 1921 to 1961

From 1921, the administration of the collection of the census was transferred to the staff of the Commonwealth Electoral Office so the Census Bureau had little to do with that side of the operation. As the Electoral Office had local staff in every region of Australia at the time it would have seemed a practical option, especially as the Census Bureau and the Electoral Office were both branches of the Department of Home and Territories in 1921.

In addition, in censuses after 1911, the introduction of mechanical tabulation machines changed the work of processing the census. Hollerith machines, developed for the United States census, were first used in Australia in 1921. Because of the long time lapse between censuses (10 years or more in the first half of the 20th century), even the permanent staff needed to be retrained for every census. While the methodology did not change substantially in this period, there were still changes in staffing.

Although collection and tabulation remained men's work, with the introduction of machines came more work for women. Key punching was a method of transferring information from the schedules collected from respondents, on to cards that could be read by the tabulating machines. This was achieved via punching holes in the cards where the holes signified different information. It was seen as similar to typing and was considered women's work. The gendering of the machine tasks into men's roles and

women's roles was in line with how the work was perceived internationally. Women were key punch operators and key punch verifiers, but men were their supervisors and men worked all the other tabulation machines as well as doing the clerical work.

The census of the 1930s was delayed due to the depression. Eventually it was run in 1933, two years later than originally planned. The decision to go ahead with the census was in part because of the potential boost that the large number of temporary census jobs might provide to the economy. Certainly because jobs were so scarce at this time, jobs on the census were even more highly prized than usual. The 1933 census was the first run out of Canberra from a prefabricated building opposite the Melbourne building on the corner of Alinga Street and Northbourne Avenue, known as the Census Office or the Old Jolimont Building.

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We are fortunate to have a unique insight into the working life of one group of workers for the 1933 census due to the memorabilia kept by one family. Walter Williamson was one of the draftsmen developing the individual maps for every census district in Australia. He and his family moved to Canberra for around six months from the end of 1932 to mid-1933. When his temporary job finished he asked all the men he worked with to autograph a spare collector's book with ditties, poems, notes and drawings reflecting on their time together. It is full of good humour and camaraderie and differs little from that which a group of co-workers might produce today when one of their number leaves, except that instead of photos it includes drawings such as a drawing of the building they worked in, and a caricature of them playing table tennis in their 'rec' room. It also includes a significant number of references to the straitened times

Courtesy of Wendy Williamson and Kirsten Northwood



They'll hold another census in the year of '43  
For they seem to think a census  
is a real necessity  
So if you haven't got a job  
when that time comes along  
Just register and take a trip  
and join the happy throng.  
And if this Great Depression lasts till then;  
keep calm and placid  
Cause if beer won't cure your sorrow  
Well! There's always Prussic acid

Signed I.C.C.  
5 May 1933

*Contributions to Walter Williamson's collectors' book by two colleagues, May 1933*

Not all the men were draftsmen. Some were employed to check the maps, to mount each map into the individual collectors' books, or to manually add a detailed description of each collector's district. Like the drafting staff, the coding workers were moved to Canberra for their job in mid 1933 to early 1934. While a few were able to bring their families, most moved to Canberra by themselves, to live in hostel accommodation. Given the desperate times, most of the coding workers employed were married ex-servicemen, as these men were seen as the most in need, and most deserving, of a government job.



Walter Williamson and the foreword to his collectors' book, May 1933

In this district are many worthy men  
Some skilful at checking—others with the pen  
Some at stamping are also quite expert  
And so are the Mounters—ask Archie or Bert  
They came from many places—both near and far  
From Sydney's fair city and windy Canberra,  
From Brisbane and Hobart & stately Adelaide  
And Melbourne on the Yarra—they're all in the Big Parade  
But no matter where they come from  
Or their skill at work or play  
It has been a pleasure to meet them all  
And work with them day by day  
And now the job is finished  
And I return to my home town again  
This book will always remind me  
Of the chaps who who were "dinkie-die" men.

The Collector

The collection of the 1933 census was disturbed by floods. The flooding was so serious in Queensland that it delayed the collection of the census for several weeks. One collector in Wakool (in south west NSW) also had problems with rain in combination with his method of transportation.

I was travelling on a pedal bike with census papers in a sugar bag slung on my back" said Mr Grant. "Heavy rain fell, and the black soil clogged up the wheels, so I completed the census carrying the bike instead of the bike carrying me. (Endnote 3)

Like the 1931 census, the 1941 census was also delayed, this time until 1947, after the Second World War. The pay scales for 1947 still listed separate pays for collectors working on foot, by bicycle, or horse, but now also included those working with motorcycles or motorcars.

The Australian Women's Weekly reported that women would have liked to have been collectors for the 1947 census but the Commonwealth Electoral Office (which still oversaw the census collection):

"...[did] not consider it a suitable job for women, as it is arduous, and there is too much risk attached to it". (Endnote 4)



The Australian Women's Weekly 21 June 1947 p. 13

At mid century, old and new forms of transport were used by census collectors. Mr Clyde Barwick of Hurstville, NSW, on motorbike; Mr H B Fletcher of Punchbowl, NSW, with his bicycle and Mr Ernest Graham, Seven Hills, NSW, in sulky.



The mapping for this first post-war census was mainly done by the Australian Survey Corps of the Department of the Army in Melbourne.

The tabulating work was undertaken in Sydney for the first time. The Statistician's report states that this was because no living accommodation for such a large number of temporary staff could be found in Canberra. However, internal letters suggest that there were also difficulties in finding suitably sized office space in Canberra. Again, preference was given to ex-servicemen, and after all the suitable ex-servicemen were hired there were few other positions available for anyone else. Women were hired only to staff the card-punching machines and the verifying machines.

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The next census was timed to fall halfway between the 1947 and the 1961 censuses, in 1954. While the collection remained under the auspices of the Australia Electoral Commission, we have a letter which provides a unique perspective of what it was like as a collector in remote Australia in the middle of the century. At that time, policemen were the most common collectors in that region and one particular policeman was asked to explain why he had taken so long to complete his route. It transpired this was mainly due to the lack of direct roads, the constant breakdown of his vehicle, and the fact that as a policeman he had to register people's vehicles and renew all sorts of licences, at the same time. Furthermore, the loneliness of the outback life meant that at every stop, people wanted him to stay and chat:

Most required at least 30 minutes' explanation as to why the census should be carried out. They gasp at the size of the form, and make numerous comments as to whether they have to include the number of teeth they have, criticise the way the form has been drawn up, can't understand why Nationality and Race are both required, because if they are British, they are not Chinamen. They all have a joyful time getting each others ages, Mother usually won't tell until she has made a cup of tea, or had a girlish giggle... Hold the pen over the paper, tell funny stories, or go into long reasons why Billy is not a cousin but a cousin in law or something. (Endnote 5)

The 1954 census saw some big changes for processing staff. For the first time, three different processing centres were set up in Sydney, Melbourne and Brisbane. Card punching, mostly a woman's job, became obsolete. Staff now simply marked cards which were punched by machines which could detect the marks. For the first time, women were hired to undertake the actual processing and coding work, and staff's coding was assessed to see how it could be improved:

...it became obvious that the women on the whole performed far better than men in coding operations. Since that census then, the accent has changed from recruiting male coders to one of using female ones. (Endnote 6)

By 1961, mapping was again undertaken within the Census Bureau itself. The 1961 census was the last census to be processed by hand. Processing was undertaken in two separate locations in Sydney because they were unable to obtain one location sufficiently large enough. Coding, editing and card marking was done on one site by about 400 staff while on another site 100 staff worked on preliminary checking. Final tabulation was undertaken in Canberra.

In 1966, a centralised processing centre was established in Sydney where an average of 800 people worked over 12 months. For the first time more than 90 per cent of the temporary clerical employees were women.



*The coding floor in 1966 — 90% of the staff were women.*

## Censuses 1966 to 1976

The period 1966 to 1976 saw big changes: practical and technical changes and also changes in the attitudes of Australians towards the census.

In 1966, a centralised processing centre was established in Sydney where an average of 800 people worked over 12 months. For the first time, more than 90% of the temporary clerical employees were women.

The Bureau was also keen to recruit women as census collectors in this period, as reported in the *Australian Women's Weekly*:

'During the last census, in 1966, women, most of them housewives, did such a marvellous job as collectors that officers of the bureau hope they'll rally in force this time'. [1971] ([Endnote 7](#))

Computers were used to process and tabulate the data for the first time. However, rather than reduce the labour or time taken, computers seem to have merely made a lot more information available. Furthermore, clients could now request data. This meant the Bureau continued to need the usual temporary census staff, but also had to hire a new and ongoing army of computing staff, as well as staff to plan and run tables.

In 1971, following the 1967 referendum which changed the Commonwealth Constitution, the Bureau began to attempt to collect census information from all Aboriginal and Torres Strait Islander people. This was a focus of subsequent censuses, with refinements to procedures to suit people in remote areas and other changes put in place.

The collection system continued within the Electoral Office in 1971 but a new formalised recruitment system was introduced for both field supervisors and collectors. There was a nationwide advertising campaign to match. A new collection training system was introduced, copied from a similar system used in the United States, as a means of standardising the collection system across all of Australia. In all, around 20,000 collection staff were employed.

Around 1,000 temporary staff were employed to process the 1971 census; processing was again based in Sydney. Some computer editing was used for the first time to ensure that there were no unacceptable combinations of information. For example, a computer could find an error if a child aged nine had a period of residence of 15 years. However, most editing was still done by hand.



1976 census publicity photo

There were doubts as to whether the 1976 census would go ahead with the change of government late in 1975 and subsequent consideration given to cancelling the census to reduce expenditure. However, in February 1976, funds were approved. Due to the late decision, little time was left to develop the field system, so the system from 1971 was used again. Around 25,000 collectors were recruited for this census.

In 1976 collectors were facing more antagonism at the door than in any other census. While this still only translated into a 2.7% underenumeration rate, this was still higher than at any time before or since. The 1976 census suffered from public condemnation both through the media and through political statements which were likely to have deterred some households from completing their schedules. Unfortunately, due to budget cuts, it was also difficult for the Bureau (now named The Australian Bureau of Statistics or ABS) to counter those messages publicly at the time.

Due to the need for cost cutting and to split the costs over two financial periods, the processing of the 1976 census was conducted in two phases. Preliminary processing was carried out in decentralised centres in each state capital city, as well as Canberra and Darwin, immediately after the census. Around 600 temporary employees were hired for three months to extract very rudimentary information (age, sex, marital status and basic birthplace).

However, the rest of the census was not processed until 1977–78. In fact, only 50% of the census was ever processed. This occurred in Sydney, where around 1,200 staff were employed for nine months, and was completed in early 1978.

## Censuses 1981 to 1996

From the 1980s on, there was a much greater emphasis on public consultation and on publicity, with many staff employed in those areas for the first time. There were also some special efforts to contact culturally diverse groups. Wherever possible, Aboriginal and Torres Strait Islander people were recruited to collect from Indigenous people and the forms for remote communities were redesigned to allow them to be completed by the interviewer and to make them more relevant to people living in remote places. To reach people speaking languages other than English, a telephone interpreter service was added to the telephone inquiry service and multilingual brochures were made available.

In total, 32,500 field staff were employed in 1981. Each collector visited on average 200 dwellings. In a change from the previous three censuses, processing was undertaken in Melbourne. Data was processed on a state by state basis with workloads varying depending on the state and the process. The maximum processing staff employed at any time was 2,000.

Since 1921, the collection of the census had been supervised by the Australian Electoral Commission. However, in 1986



1986 census publicity photo

there were industrial disputes in the key electoral offices of New South Wales and Victoria which meant that the ABS needed to establish new arrangements for those states and undertook the management of those collections itself. In 1986 there were almost 30,000 collectors hired.

After the 1986 census, a hazard of collecting was highlighted when the ABS was asked by the NSW Law Reform Commission to survey its collectors concerning their experiences with dogs. The survey found that 9% of collectors had been attacked by a dog whilst undertaking their duties and there were many other instances of near attacks. But dogs were not the only problem:...

One collector was bitten by a horse... A few collectors were driven off by geese, two were pursued by pet emus, one was attacked by nesting plovers, and another had the misfortune to be chased by a large pig. (Endnote 8)

Computer assisted coding... meant a significant reduction in the data entry required, changing the staff numbers and skills requirements of those temporarily employed for that and subsequent censuses.

The collection management went so well in the states managed by the ABS in 1986 that from 1991 onwards, the Bureau managed the collection itself in all states. In 1991, there were around 38,000 collectors hired and around 41,000 temporary field staff in total.

In both 1986 and 1991, the processing of the data took place in Sydney. In 1991, optical mark recognition (where householders answer by marking a horizontal line which a computer can read) was used for the first time, to capture much of the information on the forms. Computer assisted coding, which is a method of using computers to assist with the coding of hand written responses, was also introduced. These changes meant a significant reduction in the data entry required, changing the staff numbers and skills requirements of those temporarily employed for that and subsequent censuses.

Technology continued to change census work in 1996, when geographic computer systems were used to create the individual maps for collectors for the first time. The collectors were asked to provide comments on the maps and these were taken into account for the 2001 census maps.

In 1996, more than 30,000 collectors were hired. While most collectors, then and now, have a standard block of homes to collect from, some are hired to collect from hotels, remote parts of Australia or from those who speak a language other than English. Some are also hired to collect the census details of homeless people living on the streets. In 1996, one census collector was counting homeless on the streets in Sydney:

Getting the trust of these people seemed to be the most important part of the whole operation. Some people seemed to find a female interviewer less threatening. The Census windcheater was also a big help, as it clearly identified us as being from the census (and not the police). The most common concern expressed was that we would pass the information we were collecting on to the police or the DSS [Department of Social Security]...

...They tended to gather around to some extent as we asked our questions. While there were no problems, I was very glad at this point that the other collectors were nearby.

In cases ...where we couldn't approach people, and it was obvious that they would not be completing a form anywhere else that night, we counted them, noted their sex and approximated their age where possible. (Endnote 9)



## Censuses from 2001

The most striking development in census operations since 2001 has been the eCensus, which enables people to supply their information over the internet instead of on a paper form. Although it had a very small scale start in 2001, in 2006 close to 800,000 households — nearly 10% of the households in Australia — chose to use the eCensus. In the centenary census in August 2011, it is expected that 25% or more of households will choose this method to respond to the census. Households can also choose to go paper free, receiving only a form number and secure access code from the census collector, to use when they access the eCensus site.

Since 2001, the internet has also been used to provide answers to common questions, complementing the telephone inquiry service. In 2006, an internet-based system was introduced to help field managers as they went about their job of recruiting staff, allocating workloads and aiding the census collectors. Mobile phones were a requirement for collectors in 2006, as SMS messaging was used to update them on their workloads.

While technology continued to influence census work, at the same time, various practical problems in delivering and collecting census forms were tackled. For example, in capital cities, census collectors reported problems accessing secure apartment blocks, which were a relatively new phenomenon in Australia. Collectors left mail-back envelopes at these apartments, just as they do in rural areas where it is hard to pay a return visit to all dwellings. The eCensus also makes it easier for people in secure apartment buildings to respond to the census. In the Northern Territory in 2006, a decision was made to charter airplanes to take mobile teams to remote communities where it was difficult to schedule collections. This was so successful that similar methods will be used in 2011.

At a broader level, preparations for the 2011 census have included a much earlier and more extensive program of consultation with local communities across Australia. In 2011 as in 1911, it is important to feed local knowledge and requirements into census planning.

In 2011, processing will take place in Melbourne, as it did in 2006. Many permanent staff of the Australian Bureau of Statistics apply for jobs in the data processing

centre. These positions are valued because of the strong team effort and camaraderie that develops, and the challenge of being part of a large and vital operation. They work with the larger numbers of temporary staff. Temporary staff in recent censuses have come from a wide range of cultures and backgrounds, and in 2006 ranged in age from 16 to 60 years. They include people who want temporary work, such as students, retirees and women with family commitments. Other staff seek to improve their clerical and computer skills and build work experience to help them later find a permanent position.

A national telephone inquiry service, which members of the public across Australia can call if they have any questions about the census, will operate from Victoria, New South Wales and from some smaller sites in Queensland and Western Australia.

In 2001, 28,000 collectors were hired and in 2006, 30,000. A similar number are expected to be recruited for the 2011 census. Difficulties in recruiting staff in a tight labour market in 2006 led to a review of recruitment strategies and pay arrangements for collectors, which included a survey of collectors. Reasons the 2006 collectors gave for undertaking the work included interest in the work (45%) and to help the community (29%) as well as the more obvious reasons about wanting casual or short term work (38%), part-time work (18%), flexible hours (29%), work experience (14%) and just the money (31%). Changed legislation will mean that collectors in 2011 will be paid on an hourly basis rather than a flat rate for their workload and are expected to earn considerably more as a result. Without the commitment of many thousands of census collectors, the 2011 census cannot fulfil its vital role: to ensure that the people of every part of Australia — from the cities to the most remote communities — are counted on census night, 9 August 2011.

## ENDNOTES

1. Commonwealth Bureau of Census and Statistics, **Census of the Commonwealth of Australia, taken for the night between the 2nd and 3rd April 1911, Volume I Statistician's report**, 1917, Melbourne, p.74. [Back to article](#)
2. Commonwealth Bureau of Census and Statistics, **Census of the Commonwealth of Australia, taken for the night between the 2nd and 3rd April 1911, Volume I Statistician's report**, 1917, Melbourne, p.74. [Back to article](#)
3. 'Census takers expect shotgun or cup of tea', 1947, June 21, **The Australian Women's Weekly** (1932-1982), p. 13. [Back to article](#)
4. 'Census takers expect shotgun or cup of tea', 1947, June 21, **The Australian Women's Weekly** (1932-1982), p. 13. [Back to article](#)
5. Letter from F. McTighe, Harts Range Police Station, to D A Gill, Deputy Field Supervisor, Darwin, 12 July 1954. [Back to article](#)
6. R. M. Walker 'Centralisation and decentralisation considerations in locating the processing operation for large statistical collections with particular reference to the Australia population census', unpublished paper, 1975 [Back to article](#)
7. 'You, Too, Must Become a Statistic' (1971, March 3) **The Australian Women's Weekly** (1932-1982) p 7. [Back to article](#)
8. Australian Bureau of Statistics, 1986, NSW 'Survey of Dog Problems in the 1986 Population Census', unpublished report. [Back to article](#)
9. Australian Bureau of Statistics, NSW Office census staff, personal comments, obtained in 1997. [Back to article](#)