Australian Bureau of Statistics

Statistical UPDATE

An Information Newsletter from the Queensland Office

Issue No. 12, February 2003

In This Issue

Editorial

My name is Tara Pritchard. I have worked in the ABS for 13 years across a large number of different areas. Currently I am the Director for the Local Government Statistics Unit (LGSU) and the Administrative Data Acquisition Unit (ADAU).

In the last issue of *Statistical Update*, mention was made of the large scale changes occurring in how the ABS undertakes the collection of business statistics. The two areas for which I am responsible are examples of the way that the ABS is changing.

The original charter for the LGSU envisaged a unit which acts as a channel between the ABS and the local government sector. The unit is working towards a situation in which the majority of the data requirements of the ABS from the sector are gathered through the Unit. LGAs have a large burden placed on them by the ABS (especially the larger LGAs). The LGSU is actively working to eliminate duplication of data collection and provide councils with friendly means of providing data to the ABS. This will have obvious benefits in terms of enabling more effective management of providers and the obligations placed upon them. Standardisation of statistical concepts as they relate to local government will also be a beneficial outcome. Concentration in this manner will also serve to deepen ABS expertise in all matters local government which will yield resounding benefits throughout the entire organisation.

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Tara Pritchard

A major focus of the LGSU over the past 6 months has been the redevelopment of the Local Government Finance Statistics quarterly estimates collection. The LGSU took an innovative approach to the collection of local government finance statistics quarterly estimates. The number and selection of items included in the survey was rationalised and standardised in consultation with key internal clients including National Accounts. Timeliness is a crucial consideration in providing data for this collection as the data directly contributes to the calculation of the National Accounts. In order to achieve an increase in timeliness and quality, an entirely electronic methodology was devised based on the capabilities of Excel, the preferred tool within the local government sector. LGAs furnish data in an Excel workbook which they lodge directly on to the ABS Web site using the facility of the secure deposit box. As well as yielding significant improvements in timeliness and response rates — 38% increase in response rate in the first quarter of the new form, this collection re-development broke new ground in the areas of electronic form design for the ABS.

The LGSU also has major projects currently being undertaken with regard to:

- Standardisation of annual collection methodology;
- Development of a Local Government Purpose Classification will make it easier for councils to report and also increase the relevance of information available to the sector and
- Review of how LGAs are selected and for which surveys. This will ensure that LGAs are only selected in surveys where appropriate

The Administrative Data Acquisition Unit (ADAU) is an important component of the Economic Statistics Data Centre (ESDC) and will be a centre for best practice for the provision of consistent management and technology treatments for the acquisition of administrative by-product data. The ADAU will implement efficient and effective processes for managing providers, administrative data and internal clients.

Initially the ADAU will be responsible for developing the infrastructure to undertake acquisition and management of electronic data transfer by providers and transformation of the data for internal clients. Ongoing activities within the ADAU will include: technical provider management; dataset acquisition; dataset transformation; status reporting; development, maintenance and tuning of data formats; transformation and load processes and custodianship of data and provision of assistance/advice to client areas in obtaining and managing administrative by-product data sources.

With administrative data collection and electronic data capture advancing and expanding in the statistical arena, the ADAU will be a reference point for providers and internal clients. It will also provide the opportunity for the ABS to play a role (nationally and internationally) in changing technologies and standards for data collection.

If there are any issues you would like to discuss, please feel free to give me a call on my direct line 07 3222 6257 or email me on <tara.pritchard@abs.gov.au>.

— Tara Pritchard

New Regional Wage and Salary Earner Statistics Now Available

Eight tables of wage and salary earner statistics compiled from the Australian Taxation Office's Individual Income Tax Return Database for 1999–2000, are now available' with another six available soon. The tables give details at statistical local area (SLA) level for all statistical local areas in Australia. The tables are expected to be available on the ABS Web site <www.abs.gov.au> in mid-March.

Table 1 gives: number of wage and salary earners; total wage and salary income; median wage and salary income; average wage and salary income; total income; median total income and average total income. Other tables give details such as: age by sex; occupation (major groups) by sex; occupation (major groups) by age; wage and salary income by sex; wage and salary income by age; wage and salary income by occupation (major groups) and occupation (minor groups).

These tables expand on the information already available in *Experimental Estimates, Regional Wage and Salary Earner Statistics, Australia, 1995–96 to 1998–99* (cat. no. 5673.0) released in July 2002.

For further information contact Mark Nowosilskyj on 08 8237 7358 or <mark.now@abs.gov.au>.

STATISTICAL DEVELOPMENTS

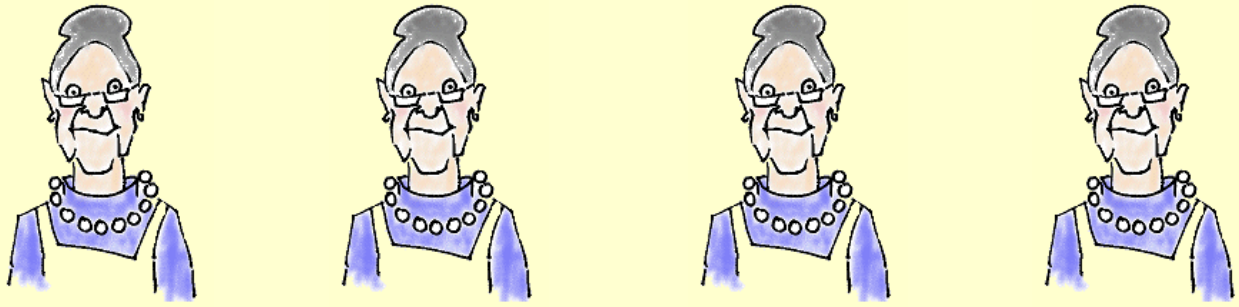
Launch of Ageing Theme Page

The National Ageing Statistics Unit (NASU) launched a new theme page on Ageing on the ABS web site in January 2003. The Ageing Theme Page is designed as a guide for users with a particular interest in the social and economic impacts of the ageing of the Australian population. The theme page provides a link to the quarterly NASU newsletter '*Age Matters*', the first edition of which was launched simultaneously with the theme page. The Ageing Theme Page can be accessed through the ABS web site by selecting 'Themes' from the navigator bar on the left hand side of the ABS home page, and then clicking on 'Ageing' under the People sub-heading on the next page.

Within the theme page there are links to special articles on subjects involving ageing as published in ABS flagship publications as well as links to main features of some irregular publications on older people. Publications containing age-related data are also listed along with some publications of interest to be released in the near future.

Upcoming national and international conferences on ageing are listed and the theme page also includes links to other related theme pages on the ABS web site as well as links to non-ABS web sites, both national and international, which may be of interest to users.

For further information contact Dave Martyn on 07 3222 6206 or <david.martyn@abs.gov.au>.



Mortality Atlas, Australia, 1997 to 2001

On 17 December 2002 the ABS released *Mortality Atlas, Australia, 1997 to 2001* (cat. no. 3318.0), the first of its kind in Australia. The value of this atlas lies in its ability to provide a large amount of information about mortality and the relationship between causes of death and location in a visual and easy-to-understand way.

This atlas presents standardised death rates for both underlying and multiple causes of death, calculated on aggregated data for the years 1997 to 2000, classified to the Tenth Revision of the International Statistical Classification of Diseases and Related Health Problems (ICD10).

The atlas highlights. the differing spatial patterns of death rates across Australia and to explore the relationships between certain causes of death. The atlas contains 63 maps presenting death rates for the period 1997 to 2000 for selected leading causes of death within Australia and other causes of particular interest to the Australian community such as intentional self-harm and motor vehicle traffic accidents.

The two leading causes, heart disease and cancer, are presented at statistical subdivision level with capital city enlargements. Other causes are presented at statistical division level. Some simple analysis accompanies the maps. The *Mortality Atlas* also includes a set of tables which present the death rates for each of the causes highlighted.

This publication demonstrates many insights into Australian mortality and is envisaged to assist discussion and decision-making at all levels.

Mortality Atlas, Australia is available in hard copy format only at a cost of $50 and may be obtained from the Australian Bureau of Statistics by contacting information services on 1300 135 070.

For further information about causes of death statistics, customised maps or data concepts contact Peter Burke on 1800 620 963 or <peter.burke@abs.gov.au>.

Survey Sheds Light on Salinity on Farms

The land management and salinity survey was conducted in May 2002 as a supplement to the 2001 agricultural census. It was the largest survey of its type ever conducted in Australia and was sent to a sample of approximately 20,000 farmers who had indicated they have, or manage for, salinity. In December 2002, the ABS released the first results of the survey in a publication titled *Salinity on Australian Farms, 2002* (cat. no. 4615.0).

The most common salinity management practices employed were:

- Crops, pastures and fodder plants for salinity management, 3.2 million hectares,
- Trees for salinity management, 776,000 hectares,
- Earthworks (levees, banks and drains) for salinity management, 208,000 km,
- Fencing for salinity management, with 466,000 hectares fenced and
- Change of irrigation practices for salinity management purposes (over 7,000 irrigated farms had made changes to irrigation practices).

The main reported barriers to changing land management practices were lack of financial resources and lack of time (35% and 21%, respectively, of all farmers reported these as very limiting).

Data are available for each state and for the regions identified in the National Action Plan (NAP) for Salinity and Water Quality. They are also available by agricultural sector, by irrigator/non-irrigator, by estimated value of agricultural operations and by farm size.

Did you know? *(Some Queensland Statistics)*

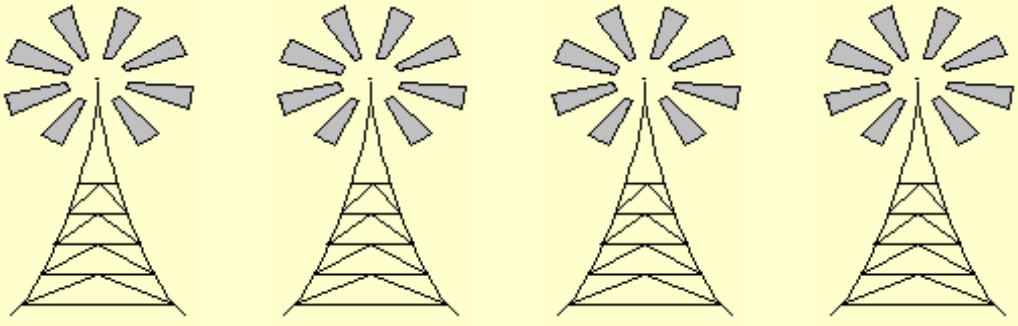
Queensland had 933 farms showing evidence of salinity with a total area of 107,000 ha of land showing signs of salinity. This represented 3.4% of the state's farms and 0.1% of the state's agricultural land. Of the 993 farms showing salinity, 600 were non-irrigated and these farms had 102,000 ha of land showing signs of salinity.

The total area of land made unusable for agricultural production by salinity in Queensland was 40,000 ha, representing 37.4% of the land showing salinity but less than 0.01% of the state's total agricultural land.

Queensland had 331,000 ha of crops, pastures or fodder plants for salinity management, 126,000 ha of trees for salinity management or prevention, 27,000 ha of land fenced for salinity management or prevention and 15,000 km of levees, banks or drains for salinity management or prevention.

Further information including facts sheets for the states, territories and NAP regions, summary tables, and a map of the NAP regions can be found in the publication *Salinity on Australian Farms, 2002* (cat. no. 4615.0) and on the ABS web site. From the ABS home page <www.abs.gov.au>, click on <Salinity on Australian Farms, 2002> in the 'Recent Releases' category (on the right hand side of the home page.

For further information contact Adam Sincock on 02 6252 6766 or <adam.sincock@abs.gov.au>.



STATISTICAL DEVELOPMENTS

Queensland at a Glance now Available

Queensland at a Glance, 2003 (cat. no. 1312.3) was released by the ABS on 5 February. This colourful, compact, glossy brochure presents a snapshot of a range of statistics together with comparative figures from the previous year.

Topics covered include: climate; agricultural production; building; Consumer Price Index - Brisbane; crime and justice; population and vital statistics; education; trade; state government finance; labour force; manufacturing; mining; tourist accommodation and transport.

Did you know:

Queensland had 18.8% of the Australian population at 30 June 2002.
In 2001, Queensland residents accounted for one fifth (20.4%) of Australian deaths from melanoma.
Queensland was the major producer of sugar cane for crushing in 2001, accounting for 92% of the Australian total.
In 2001–02 new motor vehicle sales in Queensland rose by 3% from the previous year.

For further information or to obtain a copy of *Queensland at a Glance, 2003*, contact the ABS National Information and Referral Service on 1300 135 070, fax 1300 135 211 or email <client.services@abs.gov.au>.

Remote Access Data Laboratory Provides Improved Access to ABS CURFs

An important component of the ABS output strategy to maximise the amount of data available, particularly in respect of social surveys, has been to support secondary analysis through access to microdata in the form of confidentialised unit record files (CURFs). However, the needs of researchers and policy makers have to be balanced with the obligation of the ABS to protect the identities of households and individuals.

The ABS will continue to provide CURFs on CD-ROM, however, a new system, the Remote Access Data Laboratory (RADL), will facilitate access to confidentialised microdata beyond that which can be provided on CD-ROM. The RADL provides access to this data from the client's desktop via secure Web-based communication links, or in some cases through an on-site data laboratory arrangement.

Clients can submit tailored queries to produce aggregated output according to their research needs. Restrictions on the nature of the queries that can be run will ensure that the resultant output does not constitute a threat to confidentiality. It is this level of control and user-transparency that will allow the ABS to safely provide CURF files on this system which have a greater level of detail than has previously been possible. Future features of RADL may support the analysis of augmented files and the ability to incorporate user-supplied statistical models.

The RADL is expected to be available from late March 2003. The first CURF to be released through RADL will be from the 2001 National Health Survey (NHS). An initial CURF file is being specifically designed for use through the RADL, to provide a greater depth of detail than available on the CD-ROM release. An even more detailed 2001 NHS CURF is planned for release through the RADL in mid-2003, when an extended 2001 Census Household Sample File is also expected to be available.

Queries about the Remote Access Data Laboratory should be directed to Mike Jones on 02 6252 5698, or to <mike.jones@abs.gov.au>.

Queries about forthcoming CURF releases should be directed to Carolyn Kennedy on 02 6252 5853, or <carolyn.kennedy@abs.gov.au>.

Statistical Report on Education and Training

A report on education and training, *Education and Training Indicators, Australia, 2002* (cat. no. 4230.0) was released in December 2002 by the Australian Bureau of Statistics (ABS), giving a comprehensive overview of education and training in Australia, using both ABS and other statistics.

Education and Training Indicators, Australia is the flagship for the National Centre for Education and Training Statistics and will be an invaluable reference for anyone interested in education and training. The report gives a national snapshot on a range of education data and also provides some statistics about Australia's population and the labour market. The topics in the report are grouped in line with the recently published framework for education and training statistics *Measuring Learning in Australia: A Framework for Education and Training Statistics* (cat. no. 4213.0), and cover providers of education and training, human and financial resources, participation in education and training, outputs and outcomes, and also the context in which education and training takes place.

Some points of interest:

- **providers**

In 2001, there were 9,596 schools, almost three-quarters of which were government schools. There were 87 government institutions (such as TAFEs) delivering vocational education and training programs in 1,322 locations and 47 higher education institutions which reported student data to the Higher Education Statistics Collection conducted by the Department of Education, Science and Training.

- **finances**

Total expenditure on education in 2000–01 was $40,000m, with government expenditure of $29,600m and private expenditure of $10,300m.

- **human resources**

In 2001, there were 221,900 full-time equivalent school teachers, with a student/teacher ratio of 14.7, down from 15.4 in 1991. There were 62,200 full-time and 16,000 part-time permanent staff in higher education institutions, with 43% in academic roles.

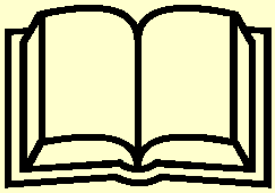
- **participation**

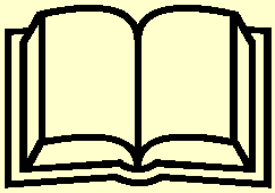
In 2001, 18% of all 15 to 64 year olds (2.3 million people) participated in education and training and 75% of people who had left school and were either working, or wanted to work, did some work-related training in the previous 12 months.

- **outputs and outcomes**

In 2000, 93% of Year 3 and 87% of Year 5 students reached the national reading benchmark. In 2001, 47% of all people aged 15 to 64 years had at least one non-school qualification, up from 41% in 1991. The unemployment rate for 15 to 64 year olds was 2.8% for those with a Bachelor degree or above, compared with 10.8% for those who did not have a non-school qualification and had not completed Year 12.
More details can be found in the publication *Education and Training Indicators, Australia, 2002* (cat. no. 4230.0).

For further information contact Jenny Dean on 02 6252 6175 or <jenny.dean@abs.gov.au>.





STATISTICAL DEVELOPMENTS

Measuring Environmental Pressures and Challenges

The Australian Bureau of Statistics released *Environment by Numbers* (cat. no. 4617.0) – a collection of articles on sustainability and the environment – in February 2003. Topics covered include climate change, Australia's rivers, renewable energy, forest conservation, salinity, and the impacts of transport, construction, fishing, mining, manufacturing and agriculture on the environment.

Some of the key findings include:

Rivers in Australia's intensive land use zone have been significantly modified
Agricultural and other activities have significantly modified the nature of rivers in much of Australia's intensive land use zone. These rivers now carry higher than natural levels of sediment and nutrient. In some regions the extraction of large volumes of water for agricultural, urban and industrial use has had a severe impact.

The consumption of Australia's freshwater resources from lakes, rivers and underground has increased dramatically in the last two decades. Between 1983–84 and 1996–97 national water consumption increased from 14,600 GL to 23,300 GL annually.

Agriculture uses more land and water than any other industry
Agriculture covers approximately 60% of the country. Since European settlement of Australia around 100 million hectares of forest and woodland have been cleared, mostly for agricultural production and land continues to be cleared for agriculture.
of soil and water quality in many areas.

Area of irrigated land has increased
Between 1990 and 2000 the area of irrigated land increased by more than half a million hectares (30%). The growth in irrigated area was greatest in Queensland, where an additional 236,000 ha (or 76%) were irrigated in 2000, compared to the area irrigated in 1990.

Irrigation can cause a decline in soil structure and water quality. The method of irrigation used influences the efficiency of water use and impacts on the environment. There has been a growth in the use of irrigation methods that are more efficient in terms of water delivery. In 2000 around 30% of irrigators reported using spray, micro spray or drip irrigation methods

Wind energy is the fastest developing renewable energy source
Australia has among the best wind resources in the world and wind energy has become the cheapest renewable energy technology. Its use is expected to grow by 25% a year up to 2020, compared with a 2.3% growth for total energy consumption.

Australians have become less concerned about environmental problems
In 1992, three out of four Australians expressed concern, but this fell to 62% in 2001. The decline was most pronounced among young Australians aged 18–24; only 57% expressed concern compared with 79% in 1992.

Fewer than one in 10 people expressing concern about environmental problems registered their concern through action, such as writing letters, telephoning or signing a petition. Of the 8% that did take action, 37% signed a petition, 33% wrote letters and 27% used the telephone. Some 6% of those who took action participated in a demonstration.

In 2001, 7% of Australians stated that they belonged to an environmental group. In 2001, 20% of Australians donated time or money to environmental protection. In 1992, the figure was over 28%.




Measuring Environmental Pressures and Challenges — *continued*

Did You Know? *(Key Findings for Queensland)*

Climate Change

- Parts of Queensland have warmed more than 1°C in the past 50 years.
- The majority of the state has warmed between 0.5 - 1°C from 1951 to 2000.
- Generally, the eastern Queensland coast experienced drier conditions, the effect becoming less pronounced with distance west.
- Parts of eastern Queensland received on average around 6 – 8 mm less rainfall per year from 1951 to 2001.
- In the far north-east and north-west of the state there are areas where rainfall has increased by 6 – 8 mm per year over the same period.

Forest Conservation

- Of Queensland's total native forest, 8% is protected (3,660,000 ha).

Coastal and Marine Environments

- In 2002, bleaching extended over 1,450 km of the 2,300 km long Great Barrier Reef.
- Within the Great Barrier Reef, 21% of reefs showed a high level of bleaching (30% or greater of the reef affected), 36% were moderately bleached (1% to 30% of the reef affected) and 43% had negligible levels of bleaching (less than 1% of the reef affected).
- Tourism to the Great Barrier Reef generated about $1,000m per year.
- There are around 730 tourist operators with about 1,500 boats and planes providing services to the 1.6 million tourists to the Reef each year.

Irrigation

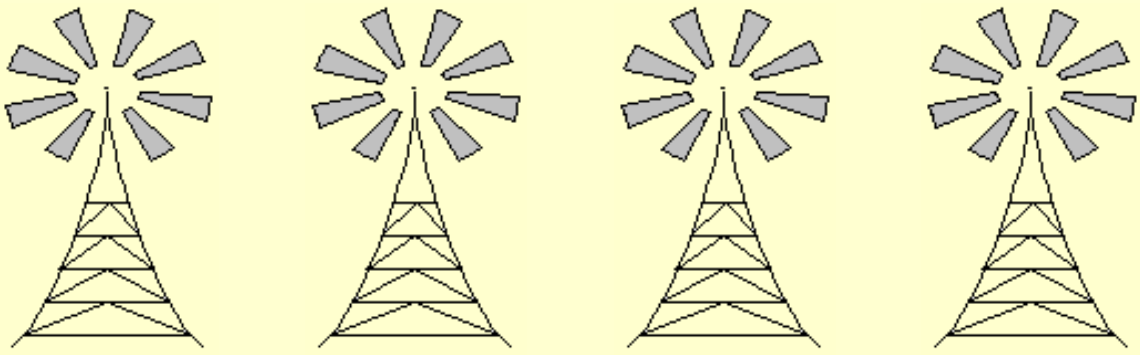
- In 2000, 548,000 ha were irrigated in Queensland, the third largest area of any state.
- From 1990 to 2000, Queensland had the greatest increase in irrigated area of any state — 236,000 ha or 76%.

Salinity

- In 2002, 993 farms showed signs of salinity in Queensland, 3.4% of all farms in the state, the second smallest percentage of any state.
- There were 107,000 ha showing signs of salinity, of which 40,000 ha are unable to be used for agricultural production.

More information is in *Environment by Numbers* (cat. no. 4617.0). Most articles presented in this publication were also included in *2003 ABS Year Book Australia, 2003* (cat. no. 1301.0).

For further information contact Michael Vardon on 02 6252 7348 or <michael.vardon@abs.gov.au>.



STATISTICAL DEVELOPMENTS

Queensland in Review Provides More State Facts and Figures for Web Users

On 7 February 2003, the ABS released Queensland in Review on the ABS Web site. Queensland in Review is a new suite of webpages which provide information on a range of Queensland topics.

Queensland in Review is structured around a number of themes. They are:

- General (Queensland Information)
- Population characteristics
- Social characteristics of population
- Personal characteristics of population
- Economic characteristics of population
- Industry
- The Economy
- The Environment

While the information provides a broad overview of topics, the webpages also contain links to other relevant data sources on the ABS Web site and to non-ABS Web sites. This enables readers to conduct more detailed investigations of each topic.

Queensland in Review is a part of ABS efforts to produce a greater amount of 'web based' material and to provide more access to state and regional information, following on from the recently launched publications of *Regional Small Business Statistics, Experimental Estimates, 1995–96 to 1999–2000* (cat. no. 5675.0) and *Regional Statistics, Queensland, 2002* (cat. no. 1362.3).

Currently, not all of the proposed topics have been released but work on Queensland in Review is ongoing and further articles and data updates will be added regularly. Interested users are advised to check periodically as the ABS Web site is updated daily at 11.30 a.m. (Canberra time).

In order to access these webpages go to the ABS home page <www.abs.gov.au> and select Australia Now (under Statistical Products and Services)/ State Statistical Profiles/ Queensland/ Queensland in Review.

For further information contact Shell McConville on 07 3222 6428 or <shell.mcconville@abs.gov.au>.

INDIGENOUS STATISTICS

Indigenous Mapping and Information Now Available on CD–ROM

Maps and 2001 Census Indigenous Profiles, based on the Australian Indigenous Geographical Classification (AIGC), are now available on one CD–ROM. The AIGC itself is based on ATSIC Regions and provides an additional standard for the publication of statistics about Aboriginal and Torres Strait Islander Australians.

The maps show locations and boundaries for ATSIC Regions, Indigenous Areas and Indigenous Locations, along with some other basic information such as major roads and rivers. Indigenous Profiles are available on the CD-ROM at a number of levels, including Australia, states and the Northern Territory, ATSIC Regions, and Indigenous Areas. There are 29 tables of demographic data in each Indigenous Profile. These Profiles are normally available free of charge from the ABS web site, but are included on the CD-ROM to enable clients to relate the geography to Census information.

Indigenous Profiles at the more detailed Indigenous Location level are not included in the product, but can be purchased separately from the ABS web site.

For further technical information contact Rod Silburn on 08 8943 2191 or <rod.silburn@abs.gov.au>.

Queensland Aboriginal and Torres Strait Island Council Areas included in ASGC 2002

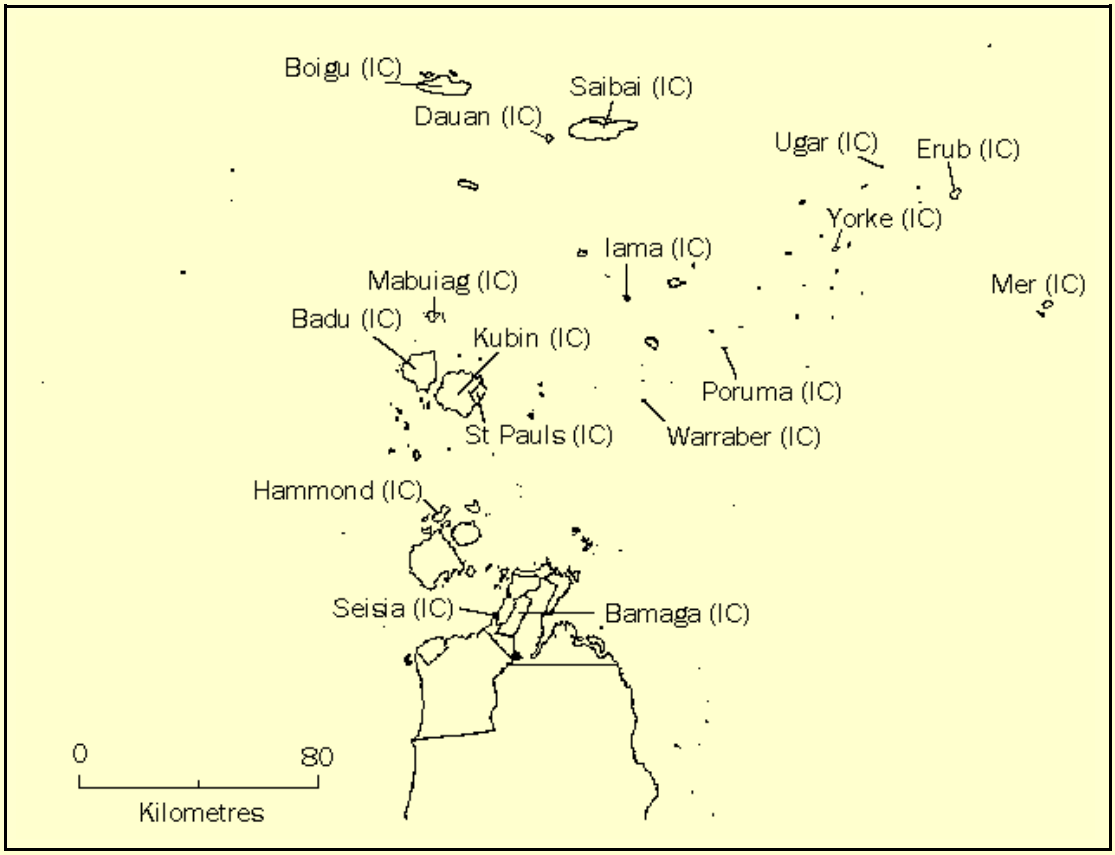
The *Australian Standard Geographical Classification* (ASGC) (cat. No. 1216.0) has for the 2002 edition introduced a very important change. The ABS has included 32 Queensland Aboriginal and Torres Strait Island Council areas as separate local government areas (LGAs) and statistical local areas (SLAs).

These areas were originally created under the Queensland legislation *Community Service (Aborigines) Act 1984* and *Community Service (Torres Strait) Act 1984.* Further amendments to the Acts made the council areas 'equivalent to and exclusive of' local government areas. These areas are equivalent in every way to local government areas and so have been acknowledged in the ASGC. These areas are commonly known as DOGITs as their land parcels are identified in a Deed of Grant of Land in Trust.

The Aboriginal and Torres Strait Island Councils are included in the Main Structure of the ASGC. The naming conventions for these LGAs include a suffix which identifies their status, being (AC) for Aboriginal Councils and (IC) for Island Councils.

The areas are:
Some of the areas are very small in area and population e.g. the Torres Strait island of Poruma is 0.40 sq km, and several cover a non-contiguous area e.g. Napranum consists of 15 separate parcels of land.

Torres Strait Island Councils



Queensland Aboriginal and Torres Strait Island Council Areas included in ASGC 2002 — *continued*

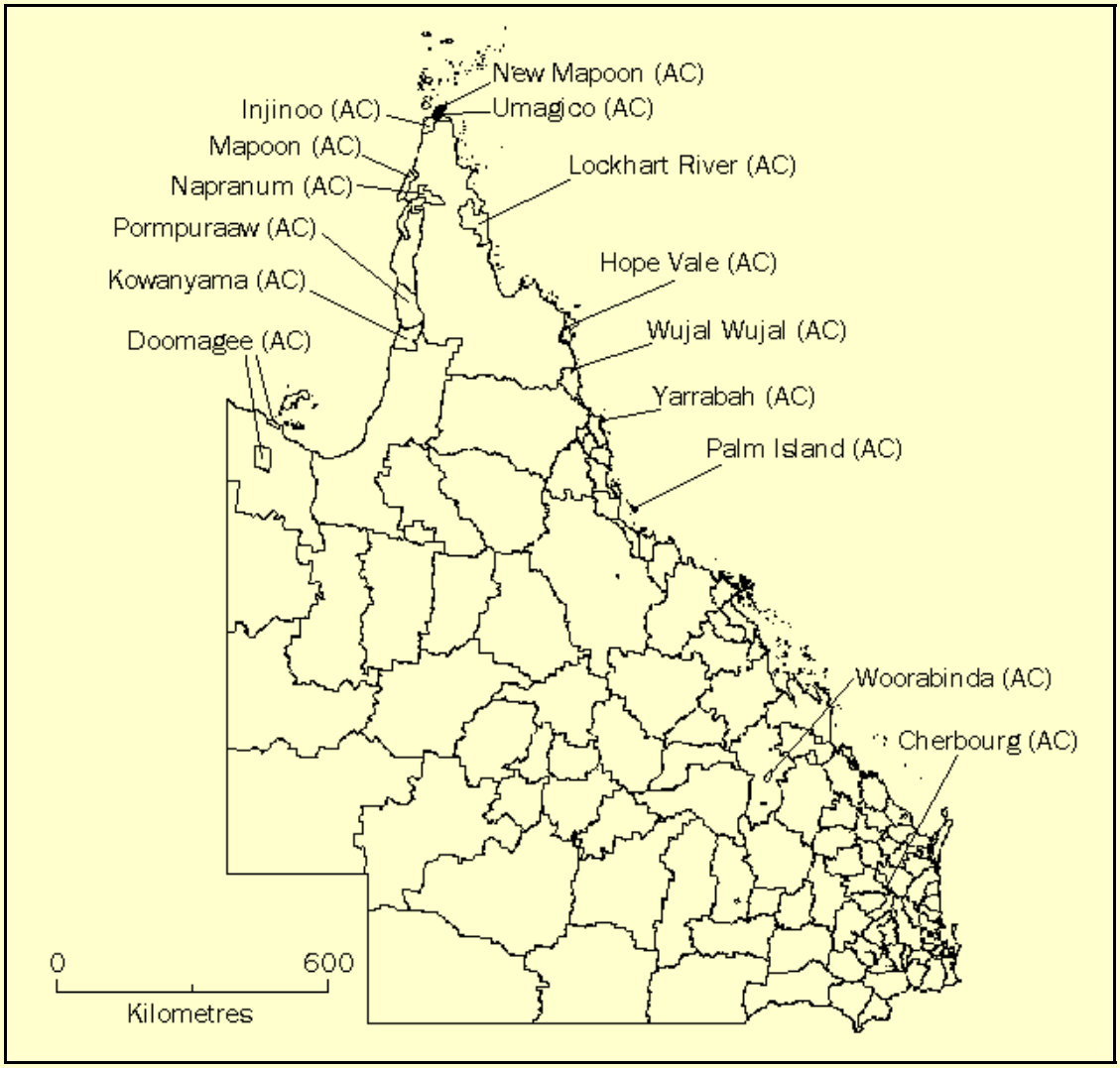
Aboriginal Councils

Cherbourg (AC)
Doomadgee (AC)
Hope Vale (AC)
Injinoo (AC)
Kowanyama (AC)
Lockhart River (AC)
Mapoon (AC)
Napranum (AC)
New Mapoon (AC)
Palm Island (AC)
Pormpuraaw (AC)
Umagico (AC)
Woorabinda (AC)
Wujal Wujal (AC)
Yarrabah (AC)

Island Councils

Bamaga (IC)
Badu (IC)
Boigu (IC)
Dauan (IC)
Erub (IC)
Hammond (IC)
Iama (IC
Kubin (IC)
Mabuiag (IC)
Mer (IC)
Poruma (IC)
Saibai (IC)
Seisia (IC)
St Pauls (IC)
Ugar (IC)
Warraber (IC)
Yorke (IC)

Aboriginal Councils



As a result of the geographical changes the ABS will produce estimated resident population statistics for these council areas, and these figures will be available in late March 2003 in the publication *Regional Population Growth, Australia, 2002* (cat. no. 3218.0).

For further information contact Maria Shpakoff on 07 3222 6321 or <maria.shpakoff@abs.gov.au>.

Just How Accurate Are Statistics?

The accuracy of a statistic is generally measured by how well it corresponds with the real world, but unfortunately in the imprecise world of statistics each statistic has associated with it a relative standard error, which gives the probability that the real figure lies within a (hopefully) small percentage of the statistic given. But why is there any doubt about the figures being exact? Because statistics are generally based on a sample of the total.

Consider a barrel containing 10,000 marbles, 5,000 black and 5,000 red. Stir well to make sure that all are well mixed together. Now take a jug and scoop out a sample of the mixture and count how many of each colour are in the sample. The proportion may vary somewhat from the exact figure of 50% and the amount of potential variation from this can be calculated exactly from the number of marbles in the sample. Take the simplest case, a jug holding only one marble. each time a sample is taken it will be 100% black or 100% red (not very useful). A two-marble jug can be expected to give a 'right' result two times out of four, an all black sample once in four tries and an all red sample once in four tries (over a large number of tries). As the number of marbles in the sample is increased, say to 100 marbles, the chance that an all black or all red sample is taken rapidly decreases to vanishingly small — for a 100 marble sample, one chance in a number larger than 1 followed by 30 zeroes!

If a large number of 100 marble samples were taken and the frequency of each result from zero red to zero black made into a graph, the result would look very closely like a normal curve. It is in fact a binomial distribution, (at this sample size very close to a normal distribution), the standard deviation of which can be calculated exactly and is SQRT (100 x 0.5 x 0.5) = 5.

This means that over an enormous number of samples, in 68.27% of the samples the actual count of red marbles would be between 45 and 55, in 95.45% of samples the result would be between 40 and 60 and in 99.73% of the samples the result would be between 35 and 65. (These percentages reflect the proportion of total area under a normal curve within one, two and three standard deviations of the mean, respectively.) When the factor to magnify these numbers to the corresponding results for the whole population is applied, the standard error of our estimate for the whole population becomes (10,000/100 x 5) = 500 and we can say that the value we estimate for the whole barrel will lie between 4,500 and 5,500 with a 68.27% certainty and between 4,000 and 6,000 with a 95.45% certainty and between 3,500 and 6,500 with a 99.73% certainty.

As the number of marbles in the sample is increased, the size of the standard deviation of the sample increases as the square root of the sample size. A sample of 400 would have a standard deviation of SQRT (400 x 0.5 x 0.5) = 10. The standard error of our estimate for the whole barrel is then 10,000/400 x 10 = 250.

Increasing the sample size by a factor of four has halved the standard error of the estimate. A ninefold increase would reduce the standard error to one third and so on. This principle of increasing sample size giving increased survey accuracy applies to the real world of sample surveys. There is, however, a practical limit to the usefulness of increasing the sample size — the cost of collecting and processing. In the real word of survey design, determining the sample size of each survey is a juggling act between the degree of accuracy desired and the cost of collecting and processing.

In reality, the ABS takes only one 'jugful' in conducting a survey and the true figures are unknown, or only approximately known from other data or earlier surveys. The probabilities that the estimates are within one, two or three standard errors of the true figure, however, remain the same as they are properties of the normal curve.

If our 400 marble jug picked up 220 black marbles from a barrel of 10,000 black or red marbles of unknown total composition, our estimate would be that the barrel held 220 x 10,000/400 = 5,500 black marbles, with a 68.27% probability that the real figure was between 5,250 and 5,750.

So how accurate are statistics? As we have seen, there is 68.27% chance the figures are within one standard error of the number quoted. If this is considered the 'right' range then there is also a 31.73% chance the figure is 'wrong'. And this applies to every statistic!

Can you rely on ABS statistics? Well right now I'm 68.27% confident that you can! or perhaps I should say I'm confident that you can 68.27% of the time?

For further information contact Brett Frazer on 07 3222 6084 or <brett.frazer@abs.gov.au>.

Time Series Profiles and Usual Residents Profiles Available from Census Earlier than Expected

We are pleased to announce that both the 2001 Census Time Series Profiles and Usual Residents Profiles for statistical local areas and above, will be released one month earlier than originally scheduled. The Time Series Profiles were released on 28 January 2003. Both the Time Series and Usual Residents profiles will all be accessible via the ABS web site <www.abs.gov.au> for $10 per area.

Time Series Profiles

Are you interested in how have we changed over the past decade? Time Series Profiles provide you with the information to conduct analysis and compare statistics across a number of years. They contain 22 tables comprising data from the 1991, 1996 and 2001 censuses (where the classifications are comparable). Some classifications have been redefined to ensure data comparability between censuses.

Data are based on place of enumeration. The ASGC areas of SLA, SSD, SD, LGA, Statistical Districts and States/Territories and Australia are available.

Usual Residents Profiles

The Usual Residents Profiles will be released on 18 March 2003. For the 2001 Census, for the first time, Usual Residents Profiles will be produced down to collection district level. The quality of responses from the 2001 Census enabled the accurate coding of people's usual residence down to this small area level. These profiles are based on place of usual residence, and contain 28 tables. The Usual Residents Profiles give you a better understanding of the population that normally lives in that area. For example, the ski-fields of NSW and Victoria have an influx of tourists in August (the month in which the Census is held). Having usual residents data reflects the characteristics of areas during normal periods.

The geography available will be the ASGC areas of SLA, SSD, SD, LGA, Statistical Districts, States/Territories and Australia, however, usual residents data can also be provided at CD level as a customised data service.

CLIB 2001

Released in October 2002, CLIB 2001 is an electronic product provided free of charge to libraries through the ABS Library Extension Program (LEP) as a community service. This product will be released in three stages. LEP libraries include member public libraries, TAFE and university libraries, the Commonwealth and State Parliamentary libraries and the National and State Libraries. The product CLIB 2001 contains Classification Counts and Community Profiles for all standard census geographic areas from collection district to Australia and software that allows library users to access, display and print census data.

The first release of CLIB 2001 contains Basic Community Profile first release data, Classification Counts and Indigenous Profile first release data and census reference products. Next month, release 2 of this product will have all second release data for the BCPs, IPs and Classification Counts plus Time Series Profiles. Release 3 is scheduled for September 2003 and will contain Working Population, Expanded Community and Usual Residents Profiles.

For further information contact the ABS National Information and Referral Service on 1300 135 070 or email <client.services@abs.gov.au>.

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For further information contact Robyn Mac Donald on 07 3222 6232 or <robyn.macdonald@abs.gov.au>.

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Telephone: 1300 135 070
TTY: 3222 6325
Consultants will assist with your statistical inquiries

Internet Site

www.abs.gov.au
email: clientservices@abs.gov.au

E-kiosk

Electronic copies of ABS publications as far back as 1998 are available for sale. Hard copy will be produced for those who require it. Visit us on the 18th floor at 313 Adelaide Street and browse. We are open 8.30 a.m. – 4.30 p.m.

Library

The Library is situated alongside our bookshop and provides a complete range of ABS current and historical publications.

Contact for Queensland State Government Departments

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