Australian Bureau of Statistics

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# ENVIRONMENTAL ISSUES: WATER USE AND CONSERVATION AUSTRALIA

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INQUIRIES

For further information about these and related statistics, contact the National Information and Referral Service on 1300 135 070.

# NOTES

## ABOUT THIS PUBLICATION

This publication presents information about water usage and water conservation practices of Australian households. It covers a range of topics including household water sources, water usage, and water saving practices inside and outside the dwelling.

The statistics in this publication were compiled from the Water Use and Conservation Survey, conducted throughout Australia in March 2010.

All tables appearing in this publication are included in a Data Cube (spreadsheet format) available on the ABS website <http//www.abs.gov.au> with corresponding Relative Standard Error tables. Additional tables are also included in a Data Cube. For a list of tables, refer to the contents page of the Data Cube.

The title and catalogue number of this publication replaces *Environmental Issues: People's Views and Practices* (cat. no. 4602.0).

## DATA COMPARABILITY

For the first time, the Water Use and Conservation survey has included households residing in very remote parts of Australia. The inclusion of very remote parts of Australia has minimal impact on Australian level estimates, however it could improve Northern Territory estimates. See paragraph 3 of the Explanatory notes for further information.

Household Water Use and Conservation data is collected every three years. Previous data were collected and published in 2007, 2004, 2001, 1998 and 1994. Where appropriate, these data have been included in this publication to enable comparisons over time. When comparing 2007 and 2010 grey water estimates, users should be aware that some differences in the data may be due to the change in question methodology. See paragraph 11 of the Explanatory notes for further information.

New content has been included in the 2010 survey to provide information on government rebates and incentives. See paragraph 13 of the Explanatory notes for further information.

## ROUNDING

As estimates have been rounded, discrepancies may occur between sums of the component items and totals. Published proportions are calculated prior to rounding the estimates and therefore some discrepancy may occur between these proportions and those that are calculated from the rounded estimates.

Brian Pink
Australian Statistician

# SUMMARY OF FINDINGS

## INTRODUCTION

This publication presents the results of the Water Use and Conservation Household Survey conducted in March 2010. The household information collected included:

- sources of water
- water use and water conservation practices inside and outside the dwelling
- use of rainwater tanks
- prevalence of water saving products
- uptake of government rebates or incentives.

## SOURCES OF WATER

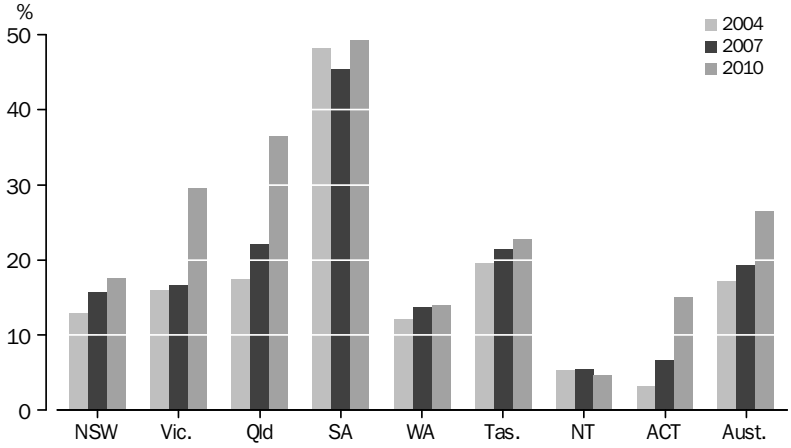
The location of a dwelling is a factor that influences the sources of water used by Australian households. Aside from major water related infrastructure, the use of water sources inherently reflects additional factors associated with location such as climate, amount of rainfall, efficacy and sustainability of river systems, and government programs relevant to water use and collection.

Mains or town water continued to be the most common source of water for Australian households in 2010, with 93% of households being connected to either mains or town water. Nearly all households in capital cities (99%) were connected to mains or town water compared with 84% of households outside the capital cities. (Table 1)

Rainwater tanks were the most popular source of water for South Australian households residing outside of Adelaide (83%). Victorian households residing outside of Melbourne also had a high prevalence of rainwater tanks (47%). Bores/wells were a common source of water for households in Perth (26%). (Table 1)

The prevalence of rainwater tanks as a source of water for Australian households continues to increase. Twenty six per cent of households used a rainwater tank as a source of water in 2010 compared with 19% of households in 2007 and 17% in 2004. South Australia continues to have the highest proportion of households with a rainwater tank (49%) but there was a marked increase in the proportion of households with a rainwater tank in Queensland and Victoria. Households that use a rainwater tank as a source of water in Queensland increased from 22% in 2007 to 36% in 2010. Similarly, rainwater tank use in Victoria increased from 17% in 2007 to 30% in 2010. (Table 2)

RAINWATER TANK AS A SOURCE OF WATER FOR HOUSEHOLDS, By state/territory—2004 to 2010



SOURCES OF WATER *continued*

Grey water was a popular source of water for households in Victoria (43%), South Australia (38%) and the Australian Capital Territory (31%). Compared with 2007, the use of grey water has fallen across all states and territories. The difference in the estimates may be explained by a combination of real world changes and the change in question methodology. See paragraph 11 of the Explanatory notes for further details. (Table 2)

WATER FOR DRINKING

Over 90% of households in capital cities reported mains or town water as their main source of water for drinking compared with 69% of households living outside capital cities. For households living outside capital cities, water from rainwater tanks was the second most popular main source of water for drinking (22%). (Table 3)

Only 25% of South Australian households outside of Adelaide used mains or town water as their main source of water for drinking. The main source of water for South Australian households outside of Adelaide was rainwater tanks (66%). (Table 3)

WATER FILTERS

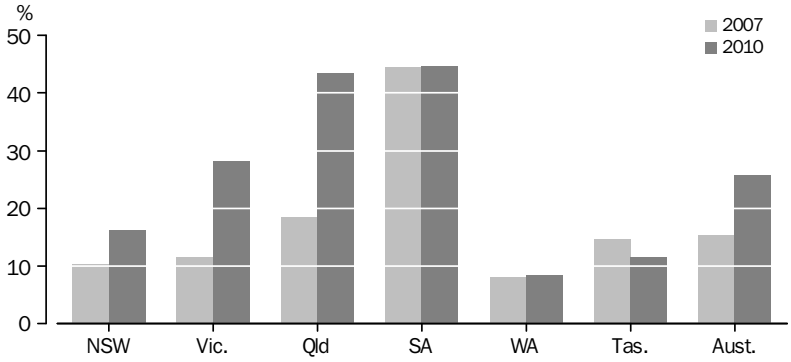
Over 32% of Australian households used a water filter for their drinking water. This proportion has continued to increase over time with 29% in 2007, 26% in 2004 and 21% in 2001. (Table 4)

The highest proportion of households that used a water filter was in South Australia (45%). The Northern Territory and the Australian Capital Territory reported the lowest use of water filters for drinking water (19% and 16% respectively). (Table 4)

RAINWATER TANKS

In March 2010, 32% of households with a dwelling suitable for a rainwater tank had a rainwater tank installed compared with 24% in 2007. During this period, households in capital cities experienced the greatest increase in the proportion of rainwater tanks installed at their dwelling (15% in 2007 and 26% in 2010). Brisbane experienced the largest increase with 43% of households reporting a rainwater tank at their dwelling in 2010 compared with 18% in 2007. This was followed by Melbourne, with 28% of households reporting a rainwater tank in 2010 compared with 12% in 2007. (Table 5)

HOUSEHOLDS WITH RAINWATER TANK INSTALLED(a), By state capital city(b)—2007 and 2010



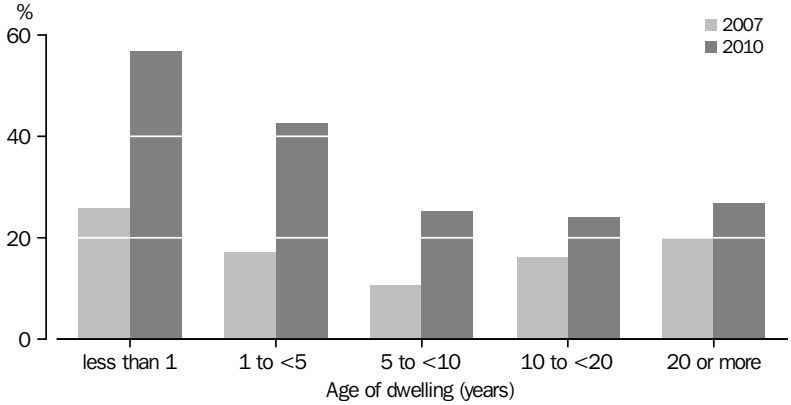

(a) Includes only dwellings suitable for a rainwater tank.
(b) No regional split between capital city and balance of state/territory for the NT and ACT as the sample does not support any breakdown beyond the whole territory.

RAINWATER TANKS *continued*

Of the households who have installed a rainwater tank, 20% of households in Queensland reported a government rebate or incentive as a reason why a rainwater tank was installed. This was the highest proportion of all states and territories. (Table 6)

Households living in newly built dwellings were more likely to have a rainwater tank installed. In March 2010, the highest proportion of households with a rainwater tank were residing in dwellings less than one year old (57%). This has increased from 2007 where 26% of households residing in dwellings less than one year old had a rainwater tank installed. (Table 7)

HOUSEHOLDS WITH A RAINWATER TANK INSTALLED(a), By age of dwelling—2007 and 2010




(a) Includes only dwellings suitable for a rainwater tank.

Of the 1.6 million households who installed their own rainwater tank, 47% reported saving water as a reason why the rainwater tank was installed and 24% reported water restrictions on mains water as a reason. (Table 6)

Thirty three per cent of households in capital cities reported water restrictions on mains water as a reason why a rainwater tank was installed compared to 15% of households in regional areas. Of the capital cities, Melbourne had the highest proportion of households to report water restrictions on mains water as a reason why a rainwater tank was installed at their dwelling (47%). (Table 6)

SAVING WATER

Family households had the highest proportion of all household types to take at least one water saving step inside or outside the dwelling (87%). The most common areas for households to save water were in the garden (62%) and in the bathroom (59%). (Table 8)

The proportion of households with dual-flush toilets and water-efficient shower heads has increased in the last 12 years. In 1998, 55% of households had a dual flush toilet compared with 86% in 2010. Similarly the prevalence of water-efficient shower heads has increased from 32% of households in 1998 to 66% in 2010. (Table 9)

Of the 6.9 million households with a garden, using mulch was the most common step taken to save water in the garden (27%). This was followed by only watering when necessary (20%). (Table 11).

MAIN SOURCE OF WATER FOR GARDENING

Almost half of Australian households (45%) used mains or town water as their main source of water for gardening. The Northern Territory had the highest proportion of households (76%) to use mains or town water for gardening and both Queensland and Victoria had the lowest (32%). Queensland and Victoria had the highest proportion of households that used water from a rainwater tank as their main source of water for gardening (20% and 19% respectively). (Table 10)

Queensland and Victoria also had the highest proportion of households that relied on rainfall for gardening or did not water the garden (31% and 29% respectively). (Table 10)

GOVERNMENT REBATES AND INCENTIVES

In March 2010, more than 600,000 Australian households received a government rebate or incentive in the last 12 months for at least one water saving product. Of those households, 41% received a rebate or incentive for a washing machine or dishwasher and 37% received a rebate or incentive for a water efficient tap or shower head. (Table 12)

Of the households that received a rebate or incentive in Queensland, 30% reported a rebate or incentive for a rainwater tank. (Table 12) Queensland also had a large increase in the proportion of households with a rainwater tank between 2007 and 2010 (an increase of 16.5 percentage points). (Table 5)

Western Australia had the highest proportion of households who received a rebate or incentive for a washing machine or dishwasher (76%). Victoria had the highest proportion of households who received a rebate or incentive for a water efficient tap or shower head (70%). The Australian Capital Territory had the highest proportion of households who received a rebate or incentive for a dual flush toilet (53%). (Table 12)

# LIST OF TABLES

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TABLES

# 1 SOURCES OF WATER FOR HOUSEHOLDS—2010

| | NSW | Vic. | Qld | SA | WA | Tas. | NT(a) | ACT(a) | Aust. |
|---|---|---|---|---|---|---|---|---|---|
| | | | | NUMBER ('000) | | | | | |
| **Capital city** | | | | | | | | | |
| Mains/town water | 1 637.1 | 1 489.9 | 715.0 | 478.4 | 640.5 | 79.9 | — | — | 5 040.8 |
| Rainwater tank(b) | 185.2 | 341.1 | 275.2 | 175.7 | 45.7 | *7.2 | — | — | 1 030.1 |
| Purchased bottled water | 373.7 | 297.0 | 156.8 | 85.3 | 122.3 | 12.4 | — | — | 1 047.6 |
| Bore/well | 36.1 | *10.2 | *5.1 | *7.2 | 169.0 | **0.7 | — | — | 228.2 |
| River/creek/dam | **8.3 | *9.2 | *9.2 | np | np | **1.2 | — | — | *28.3 |
| Rainwater collected in other container | 39.2 | 59.1 | *6.5 | np | np | — | — | — | 109.4 |
| Grey water(c) | 292.4 | 628.5 | 186.9 | 174.5 | 121.0 | 9.2 | — | — | 1 412.4 |
| Other(d) | *3.3 | *5.5 | — | np | np | — | — | — | *11.0 |
| *Total households*(e) | *1 664.4* | *1 502.5* | *731.2* | *480.4* | *650.7* | *85.1* | — | — | *5 114.3* |
| **Balance of state/territory** | | | | | | | | | |
| Mains/town water | 942.4 | 487.0 | 837.9 | 123.6 | 195.6 | 89.7 | — | — | 2 676.2 |
| Rainwater tank(b) | 293.5 | 279.6 | 345.7 | 149.6 | 78.1 | 39.6 | — | — | 1 186.1 |
| Purchased bottled water | 179.7 | 113.5 | 171.8 | 29.0 | 45.8 | 17.5 | — | — | 557.4 |
| Bore/well | 90.8 | *50.0 | 116.7 | *26.7 | 39.0 | *6.0 | — | — | 329.1 |
| River/creek/dam | 47.4 | *21.6 | *33.2 | np | np | *10.9 | — | — | 142.2 |
| Rainwater collected in other container | 18.7 | *10.3 | *10.8 | np | np | *2.0 | — | — | 43.5 |
| Grey water(c) | 253.7 | 282.6 | 247.3 | 75.3 | 49.6 | 20.5 | — | — | 929.0 |
| Other(d) | *11.8 | *7.4 | *12.7 | np | np | *1.8 | — | — | 40.4 |
| *Total households*(e) | *1 062.5* | *596.0* | *971.0* | *179.4* | *241.3* | *120.6* | — | — | *3 170.8* |
| **Total state/territory** | | | | | | | | | |
| Mains/town water | 2 579.6 | 1 976.8 | 1 552.9 | 602.1 | 836.1 | 169.6 | 73.8 | 132.1 | 7 922.9 |
| Rainwater tank(b) | 478.7 | 620.7 | 620.9 | 325.3 | 123.8 | 46.8 | *3.8 | 19.9 | 2 240.0 |
| Purchased bottled water | 553.4 | 410.5 | 328.6 | 114.4 | 168.1 | 30.0 | 5.1 | 15.8 | 1 625.9 |
| Bore/well | 126.9 | 60.2 | 121.8 | *33.8 | 208.0 | 6.6 | np | np | 565.0 |
| River/creek/dam | 55.7 | *30.8 | 42.4 | *15.7 | *13.9 | 12.1 | **0.7 | — | 171.2 |
| Rainwater collected in other container | 58.0 | 69.3 | *17.4 | *4.1 | *2.1 | *2.0 | **0.8 | 3.6 | 157.2 |
| Grey water(c) | 546.1 | 911.0 | 434.2 | 249.8 | 170.6 | 29.7 | 6.1 | 41.5 | 2 389.1 |
| Other(d) | *15.1 | *12.9 | *12.7 | *4.3 | **4.7 | *1.8 | np | np | 52.3 |
| **Total households**(e) | **2 726.9** | **2 098.5** | **1 702.2** | **659.9** | **892.0** | **205.7** | **81.1** | **132.1** | **8 498.3** |

* estimate has a relative standard error of 25% to 50% and should be used with caution

** estimate has a relative standard error greater than 50% and is considered too unreliable for general use

— nil or rounded to zero (including null cells)

np not available for publication but included in totals where applicable, unless otherwise indicated

(a) No regional split between capital city and balance of state/territory for NT and ACT as the sample does not support any breakdown beyond the whole territory.

(b) Excludes households that have a rainwater tank installed at the dwelling but do not use the tank as a source of water.

(c) These estimates are not directly comparable with 2007 estimates. Refer to paragraph 11 of the Explanatory notes.

(d) Other also includes spring and water delivered in a tanker.

(e) Totals do not equal the sum of items in each column as more than one source can be reported.

## SOURCES OF WATER FOR HOUSEHOLDS—2010 *continued*

| | *NSW* | *Vic.* | *Qld* | *SA* | *WA* | *Tas.* | *NT*(a) | *ACT*(a) | *Aust.* |
|---|---|---|---|---|---|---|---|---|---|
| | PROPORTION (%) | | | | | | | | |
| **Capital city** | | | | | | | | | |
| Mains/town water | 98.4 | 99.2 | 97.8 | 99.6 | 98.4 | 93.9 | — | — | 98.6 |
| Rainwater tank(b) | 11.1 | 22.7 | 37.6 | 36.6 | 7.0 | *8.5 | — | — | 20.1 |
| Purchased bottled water | 22.5 | 19.8 | 21.4 | 17.8 | 18.8 | 14.6 | — | — | 20.5 |
| Bore/well | 2.2 | *0.7 | *0.7 | *1.5 | 26.0 | **0.8 | — | — | 4.5 |
| River/creek/dam | **0.5 | *0.6 | *1.3 | np | np | **1.4 | — | — | *0.6 |
| Rainwater collected in other container | 2.4 | 3.9 | *0.9 | np | np | — | — | — | 2.1 |
| Grey water(c) | 17.6 | 41.8 | 25.6 | 36.3 | 18.6 | 10.8 | — | — | 27.6 |
| Other(d) | *0.2 | *0.4 | — | np | np | — | — | — | *0.2 |
| **Balance of state/territory** | | | | | | | | | |
| Mains/town water | 88.7 | 81.7 | 86.3 | 68.9 | 81.1 | 74.3 | — | — | 84.4 |
| Rainwater tank(b) | 27.6 | 46.9 | 35.6 | 83.4 | 32.4 | 32.8 | — | — | 37.4 |
| Purchased bottled water | 16.9 | 19.1 | 17.7 | 16.2 | 19.0 | 14.5 | — | — | 17.6 |
| Bore/well | 8.5 | *8.4 | 12.0 | *14.9 | 16.2 | 4.9 | — | — | 10.4 |
| River/creek/dam | 4.5 | *3.6 | *3.4 | np | np | *9.0 | — | — | 4.5 |
| Rainwater collected in other container | 1.8 | *1.7 | *1.1 | np | np | *1.6 | — | — | 1.4 |
| Grey water(c) | 23.9 | 47.4 | 25.5 | 42.0 | 20.6 | 17.0 | — | — | 29.3 |
| Other(d) | *1.1 | *1.2 | *1.3 | np | np | *1.5 | — | — | 1.3 |
| **Total state/territory** | | | | | | | | | |
| Mains/town water | 94.6 | 94.2 | 91.2 | 91.2 | 93.7 | 82.4 | 91.0 | 100.0 | 93.2 |
| Rainwater tank(b) | 17.6 | 29.6 | 36.5 | 49.3 | 13.9 | 22.7 | *4.7 | 15.1 | 26.4 |
| Purchased bottled water | 20.3 | 19.6 | 19.3 | 17.3 | 18.8 | 14.6 | 6.3 | 12.0 | 19.1 |
| Bore/well | 4.7 | 2.9 | 7.2 | *5.1 | 23.3 | 3.2 | np | np | 6.6 |
| River/creek/dam | 2.0 | *1.5 | 2.5 | *2.4 | *1.6 | 5.9 | **0.8 | — | 2.0 |
| Rainwater collected in other container | 2.1 | 3.3 | *1.0 | *0.6 | *0.2 | *1.0 | **1.0 | 2.7 | 1.9 |
| Grey water(c) | 20.0 | 43.4 | 25.5 | 37.9 | 19.1 | 14.4 | 7.5 | 31.4 | 28.1 |
| Other(d) | *0.6 | *0.6 | *0.7 | *0.6 | **0.5 | *0.9 | np | np | 0.6 |

* estimate has a relative standard error of 25% to 50% and should be used with caution

** estimate has a relative standard error greater than 50% and is considered too unreliable for general use

— nil or rounded to zero (including null cells)

np not available for publication but included in totals where applicable, unless otherwise indicated

(a) No regional split between capital city and balance of state/territory for NT and ACT as the sample does not support any breakdown beyond the whole territory.

(b) Excludes households that have a rainwater tank installed at the dwelling but do not use the tank as a source of water.

(c) These estimates are not directly comparable with 2007 estimates. Refer to paragraph 11 of the Explanatory notes.

(d) Other also includes spring and water delivered in a tanker.

## 2 SOURCES OF WATER FOR HOUSEHOLDS—1998 to 2010

| | NSW | Vic. | Qld | SA | WA | Tas. | NT | ACT | Aust. |
|---|---|---|---|---|---|---|---|---|---|
| **MARCH 2010 (%)** | | | | | | | | | |
| Mains/town water | 94.6 | 94.2 | 91.2 | 91.2 | 93.7 | 82.4 | 91.0 | 100.0 | 93.2 |
| Rainwater tank | 17.6 | 29.6 | 36.5 | 49.3 | 13.9 | 22.7 | *4.7 | 15.1 | 26.4 |
| Purchased bottled water | 20.3 | 19.6 | 19.3 | 17.3 | 18.8 | 14.6 | 6.3 | 12.0 | 19.1 |
| Bore/well | 4.7 | 2.9 | 7.2 | *5.1 | 23.3 | 3.2 | np | np | 6.6 |
| River/creek/dam | 2.0 | 1.5 | 2.5 | *2.4 | *1.6 | 5.9 | **0.8 | — | 2.0 |
| Rainwater collected in other container | 2.1 | 3.3 | *1.0 | *0.6 | *0.2 | *1.0 | **1.0 | 2.7 | 1.9 |
| Grey water(a)(b) | 20.0 | 43.4 | 25.5 | 37.9 | 19.1 | 14.4 | 7.5 | 31.4 | 28.1 |
| Other(c) | *0.6 | *0.6 | *0.7 | *0.6 | **0.5 | *0.9 | np | np | 0.6 |
| **MARCH 2007 (%)** | | | | | | | | | |
| Mains/town water | 95.1 | 93.9 | 90.0 | 93.6 | 94.6 | 84.0 | 91.8 | 100.0 | 93.4 |
| Rainwater tank | 15.8 | 16.7 | 22.1 | 45.4 | 13.6 | 21.4 | *5.5 | 6.7 | 19.3 |
| Purchased bottled water | 18.5 | 16.8 | 18.8 | 22.0 | 21.6 | 17.4 | 11.7 | 15.1 | 18.6 |
| Bore/well | 3.3 | 2.2 | 6.5 | 6.5 | 22.8 | *3.2 | *8.2 | — | 5.9 |
| River/creek/dam | 2.4 | 3.0 | 3.2 | *1.7 | 1.8 | 6.9 | — | — | 2.7 |
| Rainwater collected in other container | 6.5 | 7.9 | 5.2 | 2.0 | 2.6 | 2.8 | np | np | 5.7 |
| Grey water(a)(b) | 46.7 | 71.7 | 54.1 | 54.3 | 43.2 | 37.0 | 32.2 | 63.1 | 54.5 |
| Other(c) | 1.7 | *1.3 | 1.3 | 0.9 | 1.5 | 5.7 | np | np | 1.5 |
| **MARCH 2004 (%)** | | | | | | | | | |
| Mains/town water | 94.3 | 93.9 | 89.0 | 96.1 | 94.7 | 84.9 | 95.0 | 100.0 | 93.2 |
| Rainwater tank | 12.8 | 16.0 | 17.4 | 48.2 | 12.1 | 19.6 | (d)5.3 | 3.2 | 17.2 |
| Purchased bottled water | 24.8 | 18.1 | 16.9 | 22.0 | 19.4 | 16.1 | 15.3 | 25.9 | 20.6 |
| Bore/well | 3.3 | 1.8 | 6.9 | 4.8 | 22.7 | 2.6 | (d)6.8 | (d)0.1 | 5.7 |
| River/creek/dam | 3.0 | 2.7 | 3.4 | (d)0.8 | 1.9 | 6.8 | — | — | 2.7 |
| Other(e) | 1.8 | 2.6 | 1.2 | 1.7 | 1.1 | 3.0 | (d)0.5 | (d)1.3 | 1.8 |
| **MARCH 2001 (%)** | | | | | | | | | |
| Mains/town water | 95.3 | 93.1 | 90.1 | 94.9 | 95.6 | 87.3 | 96.5 | 100.0 | 93.6 |
| Rainwater tank | 9.7 | 13.5 | 17.5 | 51.8 | 10.4 | 17.2 | (d)1.3 | (d)2.0 | 15.7 |
| Purchased bottled water | 16.9 | 14.2 | 12.6 | 23.6 | 18.0 | 9.1 | 12.0 | 10.5 | 15.7 |
| Bore/well | 2.4 | 2.0 | 6.8 | 4.1 | 19.9 | 2.9 | (d)3.8 | (d)0.1 | 5.0 |
| River/creek/dam | 2.8 | 5.0 | 4.9 | 2.3 | 1.7 | 6.1 | — | — | 3.6 |
| Other(e) | 0.6 | 0.9 | 1.2 | (d)1.4 | (d)0.9 | (d)2.0 | (d)0.4 | (d)0.2 | 0.9 |
| **MARCH 1998 (%)** | | | | | | | | | |
| Mains/town water | 93.0 | 92.5 | 89.4 | 96.1 | 97.0 | 87.6 | 91.9 | 100.0 | 92.8 |
| Rainwater tank | 12.3 | 13.9 | 18.0 | 53.5 | 9.8 | 16.7 | (d)5.0 | (d)1.2 | 16.9 |
| Purchased bottled water | 10.6 | 10.4 | 9.5 | 20.2 | 13.7 | 8.8 | 9.8 | 12.9 | 11.5 |
| Bore/well | 2.4 | 2.5 | 8.3 | 2.9 | 20.6 | 2.5 | (d)9.1 | — | 5.3 |
| River/creek/dam | 4.5 | 3.5 | 4.4 | 1.8 | 1.3 | 6.2 | (d)1.0 | — | 3.6 |
| Other(e) | 1.4 | 2.0 | 1.3 | 1.6 | (d)0.6 | (d)1.6 | — | — | 1.4 |

* estimate has a relative standard error of 25% to 50% and should be used with caution

** estimate has a relative standard error greater than 50% and is considered too unreliable for general use

— nil or rounded to zero (including null cells)

np not available for publication but included in totals where applicable, unless otherwise indicated

(a) Not available prior to 2007.

(b) The 2007 and 2010 estimates are not directly comparable. Refer to paragraph 11 of the Explanatory notes.

(c) Other also includes spring and water delivered in a tanker.

(d) Estimate has a relative standard error greater than 25%.

(e) Other also includes spring.

# 3 MAIN SOURCE OF WATER FOR DRINKING—2010

| | NSW | Vic. | Qld | SA | WA | Tas. | NT(a) | ACT(a) | Aust. |
|---|---|---|---|---|---|---|---|---|---|
| | | | | NUMBER ('000) | | | | | |
| **Capital city** | | | | | | | | | |
| Mains/town water | 1 520.0 | 1 393.4 | 647.4 | 402.3 | 587.0 | 76.3 | — | — | 4 626.3 |
| Rainwater tank | *23.6 | *17.3 | *29.5 | 33.4 | *17.9 | *5.3 | — | — | 127.1 |
| Purchased bottled water | 116.2 | 91.8 | 54.3 | 43.1 | 44.1 | *3.2 | — | — | 352.8 |
| Bore/well | np | — | — | np | **1.7 | np | — | — | **2.9 |
| Other(b) | np | — | — | np | — | np | — | — | *5.2 |
| *Total households* | *1 664.4* | *1 502.5* | *731.2* | *480.4* | *650.7* | *85.1* | — | — | *5 114.3* |
| **Balance of state/territory** | | | | | | | | | |
| Mains/town water | 834.2 | 393.5 | 691.0 | 44.8 | 155.6 | 78.9 | — | — | 2 198.1 |
| Rainwater tank | 145.8 | 145.4 | 201.9 | 118.8 | 61.1 | 29.8 | — | — | 702.8 |
| Purchased bottled water | 59.3 | 49.7 | 56.6 | *11.2 | *23.5 | 6.9 | — | — | 207.2 |
| Bore/well | np | np | **15.1 | np | np | np | — | — | *43.4 |
| Other(b) | np | np | *6.4 | np | np | np | — | — | *19.3 |
| *Total households* | *1 062.5* | *596.0* | *971.0* | *179.4* | *241.3* | *120.6* | — | — | *3 170.8* |
| **Total state/territory** | | | | | | | | | |
| Mains/town water | 2 354.1 | 1 786.9 | 1 338.4 | 447.1 | 742.6 | 155.2 | 71.6 | 130.4 | 7 026.4 |
| Rainwater tank | 169.4 | 162.7 | 231.5 | 152.2 | 79.0 | 35.1 | np | np | 832.1 |
| Purchased bottled water | 175.5 | 141.6 | 110.8 | 54.3 | 67.6 | 10.1 | np | np | 563.1 |
| Bore/well | **16.9 | np | **15.1 | **3.9 | np | *1.6 | *5.2 | — | *51.6 |
| Other(b) | *11.0 | np | *6.4 | *2.3 | np | **3.6 | **0.7 | — | 25.2 |
| **Total households** | **2 726.9** | **2 098.5** | **1 702.2** | **659.9** | **892.0** | **205.7** | **81.1** | **132.1** | **8 498.3** |
| | | | | PROPORTION (%) | | | | | |
| **Capital city** | | | | | | | | | |
| Mains/town water | 91.3 | 92.7 | 88.5 | 83.7 | 90.2 | 89.7 | — | — | 90.5 |
| Rainwater tank | *1.4 | *1.2 | *4.0 | 7.0 | *2.7 | *6.3 | — | — | 2.5 |
| Purchased bottled water | 7.0 | 6.1 | 7.4 | 9.0 | 6.8 | *3.7 | — | — | 6.9 |
| Bore/well | np | — | — | np | **0.3 | np | — | — | **0.1 |
| Other(b) | np | — | — | np | — | np | — | — | *0.1 |
| **Balance of state/territory** | | | | | | | | | |
| Mains/town water | 78.5 | 66.0 | 71.2 | 25.0 | 64.5 | 65.4 | — | — | 69.3 |
| Rainwater tank | 13.7 | 24.4 | 20.8 | 66.2 | 25.3 | 24.7 | — | — | 22.2 |
| Purchased bottled water | 5.6 | 8.3 | 5.8 | *6.2 | *9.7 | 5.8 | — | — | 6.5 |
| Bore/well | np | np | **1.6 | np | np | np | — | — | *1.4 |
| Other(b) | np | np | *0.7 | np | np | np | — | — | *0.6 |
| **Total state/territory** | | | | | | | | | |
| Mains/town water | 86.3 | 85.2 | 78.6 | 67.8 | 83.3 | 75.5 | 88.2 | 98.7 | 82.7 |
| Rainwater tank | 6.2 | 7.8 | 13.6 | 23.1 | 8.9 | 17.1 | np | np | 9.8 |
| Purchased bottled water | 6.4 | 6.7 | 6.5 | 8.2 | 7.6 | 4.9 | np | np | 6.6 |
| Bore/well | **0.6 | np | **0.9 | **0.6 | np | *0.8 | *6.4 | — | *0.6 |
| Other(b) | *0.4 | np | *0.4 | *0.3 | np | **1.8 | **0.8 | — | 0.3 |

* estimate has a relative standard error of 25% to 50% and should be used with caution

** estimate has a relative standard error greater than 50% and is considered too unreliable for general use

— nil or rounded to zero (including null cells)

np not available for publication but included in totals where applicable, unless otherwise indicated

(a) No regional split between capital city and balance of state/territory for NT and ACT as the sample does not support any breakdown beyond the whole territory.

(b) Other also includes spring, river/creek/dam, water delivered in a tanker and rainwater collected in other container.

## 4 USE OF WATER FILTERS FOR DRINKING(a)—1998 to 2010

| | NSW | Vic. | Qld | SA | WA | Tas. | NT | ACT | Aust. |
|---|---|---|---|---|---|---|---|---|---|
| **MARCH 2010** | | | | | | | | | |
| **Number ('000)** | | | | | | | | | |
| Used water filter | 742.0 | 523.0 | 626.7 | 270.0 | 309.9 | 50.4 | 15.1 | 21.5 | 2 558.6 |
| Did not use water filter | 1 809.4 | 1 434.0 | 964.6 | 335.5 | 514.5 | 145.2 | 64.3 | 109.1 | 5 376.6 |
| **Total households** | **2 551.4** | **1 956.9** | **1 591.3** | **605.5** | **824.4** | **195.6** | **79.4** | **130.6** | **7 935.2** |
| **Proportion (%)** | | | | | | | | | |
| Used water filter | 29.1 | 26.7 | 39.4 | 44.6 | 37.6 | 25.8 | 19.0 | 16.5 | 32.2 |
| Did not use water filter | 70.9 | 73.3 | 60.6 | 55.4 | 62.4 | 74.2 | 81.0 | 83.5 | 67.8 |
| **MARCH 2007** | | | | | | | | | |
| **Proportion (%)** | | | | | | | | | |
| Used water filter | 27.9 | 22.5 | 33.8 | 38.4 | 33.6 | 23.0 | 14.1 | 14.8 | 28.6 |
| Did not use water filter | 72.1 | 77.5 | 66.2 | 61.6 | 66.4 | 77.0 | 85.9 | 85.2 | 71.4 |
| **MARCH 2004** | | | | | | | | | |
| **Proportion (%)** | | | | | | | | | |
| Used water filter | 25.9 | 22.4 | 27.4 | 30.2 | 29.0 | 20.8 | 8.3 | 12.6 | 25.5 |
| Did not use water filter | 74.1 | 77.6 | 72.6 | 69.8 | 71.0 | 79.2 | 91.7 | 87.4 | 74.5 |
| **MARCH 2001** | | | | | | | | | |
| **Proportion (%)** | | | | | | | | | |
| Used water filter | 20.2 | 18.8 | 24.0 | 22.7 | 23.6 | 18.9 | 11.9 | 11.8 | 20.9 |
| Did not use water filter | 79.8 | 81.2 | 76.0 | 77.3 | 76.4 | 81.1 | 88.1 | 88.2 | 79.1 |
| **MARCH 1998** | | | | | | | | | |
| **Proportion (%)** | | | | | | | | | |
| Used water filter | 19.2 | 16.2 | 20.1 | 17.1 | 20.5 | 14.1 | 12.4 | 9.5 | 18.2 |
| Did not use water filter | 80.8 | 83.8 | 79.9 | 82.9 | 79.5 | 85.9 | 87.6 | 90.5 | 81.8 |

(a) Excludes households that mainly drink bottled water.

## 5 RAINWATER TANK INSTALLED AT DWELLING, Households with a dwelling suitable for a rainwater tank(a)—2007 to 2010

| | 2007 | | | 2010 | | |
|---|---|---|---|---|---|---|
| | *Dwelling has rainwater tank ('000)*(b) | *Total households ('000)* | *Dwelling has rainwater tank (%)* | *Dwelling has rainwater tank ('000)*(b) | *Total households ('000)* | *Dwelling has rainwater tank (%)* |
| **Capital city** | | | | | | |
| New South Wales | 125.2 | 1 210.3 | 10.3 | 196.1 | 1 204.4 | 16.3 |
| Victoria | 136.8 | 1 178.7 | 11.6 | 347.3 | 1 231.8 | 28.2 |
| Queensland | 115.2 | 626.3 | 18.4 | 280.5 | 646.6 | 43.4 |
| South Australia | 193.3 | 433.8 | 44.5 | 192.0 | 430.9 | 44.6 |
| Western Australia | 44.0 | 540.2 | 8.1 | 49.3 | 585.3 | 8.4 |
| Tasmania | 10.9 | 74.8 | 14.6 | *8.2 | 71.0 | *11.5 |
| Northern Territory(c) | — | — | — | — | — | — |
| Australian Capital Territory(c) | — | — | — | — | — | — |
| Australia | 625.5 | 4 064.1 | 15.4 | 1 073.4 | 4 170.1 | 25.7 |
| **Balance of state/territory** | | | | | | |
| New South Wales | 315.6 | 942.7 | 33.5 | 312.9 | 946.0 | 33.1 |
| Victoria | 227.2 | 520.7 | 43.6 | 284.7 | 550.9 | 51.7 |
| Queensland | 244.5 | 766.0 | 31.9 | 352.8 | 849.9 | 41.5 |
| South Australia | 127.5 | 162.1 | 78.6 | 151.8 | 170.0 | 89.3 |
| Western Australia | 71.0 | 186.5 | 38.1 | 80.4 | 231.5 | 34.7 |
| Tasmania | 34.1 | 107.4 | 31.7 | 40.2 | 110.9 | 36.2 |
| Northern Territory(c) | — | — | — | — | — | — |
| Australian Capital Territory(c) | — | — | — | — | — | — |
| Australia | 1 019.8 | 2 685.4 | 38.0 | 1 222.8 | 2 859.2 | 42.8 |
| **Total state/territory** | | | | | | |
| New South Wales | 440.8 | 2 153.0 | 20.5 | 509.0 | 2 150.4 | 23.7 |
| Victoria | 363.9 | 1 699.4 | 21.4 | 632.0 | 1 782.7 | 35.5 |
| Queensland | 359.8 | 1 392.3 | 25.8 | 633.3 | 1 496.6 | 42.3 |
| South Australia | 320.7 | 595.9 | 53.8 | 343.8 | 600.9 | 57.2 |
| Western Australia | 115.0 | 726.6 | 15.8 | 129.8 | 816.8 | 15.9 |
| Tasmania | 45.0 | 182.3 | 24.7 | 48.4 | 181.9 | 26.6 |
| Northern Territory | *3.7 | 49.9 | *7.3 | *5.7 | 63.4 | *9.1 |
| Australian Capital Territory | 9.7 | 118.7 | 8.2 | 20.2 | 114.1 | 17.7 |
| Australia | 1 658.6 | 6 918.2 | 24.0 | 2 322.2 | 7 206.8 | 32.2 |

* estimate has a relative standard error of 25% to 50% and should be used with caution

— nil or rounded to zero (including null cells)

(a) Suitable dwellings include separate house, semi-detached, row/terrace house, townhouse etc.

(b) Includes households that had a rainwater tank installed at the dwelling even if they did not report a rainwater tank as a source of water for the household.

(c) No regional split between capital city and balance of state/territory for the NT and ACT as the sample does not support any breakdown beyond the whole territory.

## 6 REASONS WHY RAINWATER TANK WAS INSTALLED, Households who installed their own rainwater tank—2010

| | NSW | Vic. | Qld | SA | WA | Tas. | NT(a) | ACT(a) | Aust. |
|---|---|---|---|---|---|---|---|---|---|
| | | | | NUMBER ('000) | | | | | |
| **Capital city** | | | | | | | | | |
| To save water | 82.6 | 190.4 | 110.2 | 72.7 | 16.7 | *1.6 | — | — | 474.2 |
| Not connected to mains water | **8.4 | **6.4 | **14.2 | np | np | **2.5 | — | — | *35.4 |
| Water restrictions on mains water | 39.5 | 139.2 | 66.9 | 18.6 | np | np | — | — | 267.4 |
| Concerns about quality of mains water | *5.4 | **3.1 | *10.2 | 19.0 | np | np | — | — | 45.3 |
| To save on water costs | *16.9 | 47.7 | 38.3 | 23.2 | *5.0 | *1.0 | — | — | 132.1 |
| Water tank rebates | *5.8 | *6.2 | 57.4 | np | np | — | — | — | 71.6 |
| Other(b) | 38.4 | 59.1 | 58.5 | 28.9 | 8.7 | **0.7 | — | — | 194.4 |
| *Total households*(c) | *143.8* | *293.8* | *222.6* | *116.8* | *33.2* | **5.3* | — | — | *815.5* |
| **Balance of state/territory** | | | | | | | | | |
| To save water | 83.8 | 69.4 | 77.8 | 25.3 | 16.1 | 7.5 | — | — | 279.8 |
| Not connected to mains water | 60.4 | 51.9 | *67.9 | np | np | 12.5 | — | — | 251.9 |
| Water restrictions on mains water | *19.7 | 45.2 | 44.4 | *4.9 | np | np | — | — | 115.8 |
| Concerns about quality of mains water | 31.1 | *19.4 | *27.9 | *13.6 | np | np | — | — | 106.8 |
| To save on water costs | 28.4 | 17.1 | 41.4 | *10.8 | *5.7 | *1.9 | — | — | 105.3 |
| Water tank rebates | *11.2 | **3.9 | 33.8 | np | np | — | — | — | 50.3 |
| Other(b) | 50.8 | 39.7 | 58.8 | *20.2 | *11.9 | *3.2 | — | — | 184.7 |
| *Total households*(c) | *215.5* | *184.4* | *225.0* | *79.7* | *59.9* | *24.0* | — | — | *788.4* |
| **Total state/territory** | | | | | | | | | |
| To save water | 166.4 | 259.8 | 188.0 | 98.0 | 32.8 | 9.1 | *1.3 | 10.6 | 766.0 |
| Not connected to mains water | *68.8 | 58.4 | *82.1 | 29.8 | *33.2 | 15.0 | np | np | 288.6 |
| Water restrictions on mains water | 59.1 | 184.3 | 111.3 | 23.5 | *4.4 | np | np | 6.3 | 389.5 |
| Concerns about quality of mains water | 36.5 | *22.6 | 38.1 | 32.6 | 19.1 | *3.3 | **0.5 | — | 152.6 |
| To save on water costs | 45.3 | 64.8 | 79.7 | 34.0 | 10.7 | *2.9 | np | np | 242.6 |
| Water tank rebates | 17.0 | *10.1 | 91.2 | **1.2 | **2.5 | — | np | np | 122.2 |
| Other(b) | 89.2 | 98.8 | 117.3 | 49.1 | 20.7 | *3.9 | **0.8 | *4.9 | 384.8 |
| **Total households**(c) | **359.3** | **478.2** | **447.6** | **196.5** | **93.0** | **29.3** | ***3.0** | **17.2** | **1 624.1** |
| | | | | PROPORTION (%) | | | | | |
| **Capital city** | | | | | | | | | |
| To save water | 57.5 | 64.8 | 49.5 | 62.2 | 50.3 | *30.8 | — | — | 58.2 |
| Not connected to mains water | **5.8 | **2.2 | **6.4 | np | np | *46.9 | — | — | *4.3 |
| Water restrictions on mains water | 27.4 | 47.4 | 30.1 | 15.9 | np | np | — | — | 32.8 |
| Concerns about quality of mains water | *3.8 | **1.1 | *4.6 | 16.3 | np | np | — | — | 5.6 |
| To save on water costs | *11.7 | 16.2 | 17.2 | 19.8 | *15.2 | *18.9 | — | — | 16.2 |
| Water tank rebates | *4.0 | *2.1 | 25.8 | np | np | — | — | — | 8.8 |
| Other(b) | 26.7 | 20.1 | 26.3 | 24.7 | 26.4 | **13.5 | — | — | 23.8 |
| **Balance of state/territory** | | | | | | | | | |
| To save water | 38.9 | 37.6 | 34.6 | 31.8 | *26.9 | 31.1 | — | — | 35.5 |
| Not connected to mains water | 28.0 | 28.2 | 30.2 | np | np | 52.3 | — | — | 32.0 |
| Water restrictions on mains water | *9.1 | 24.5 | 19.7 | *6.1 | np | np | — | — | 14.7 |
| Concerns about quality of mains water | 14.4 | 10.5 | *12.4 | *17.0 | np | np | — | — | 13.5 |
| To save on water costs | 13.2 | 9.3 | 18.4 | *13.6 | *9.5 | *8.1 | — | — | 13.4 |
| Water tank rebates | *5.2 | **2.1 | 15.0 | np | np | — | — | — | 6.4 |
| Other(b) | 23.6 | 21.5 | 26.1 | *25.4 | *19.9 | *13.3 | — | — | 23.4 |
| **Total state/territory** | | | | | | | | | |
| To save water | 46.3 | 54.3 | 42.0 | 49.9 | 35.3 | 31.1 | *44.0 | 61.9 | 47.2 |
| Not connected to mains water | 19.1 | 12.2 | 18.3 | 15.2 | 35.7 | 51.3 | np | np | 17.8 |
| Water restrictions on mains water | 16.5 | 38.6 | 24.9 | 11.9 | *4.8 | np | np | 36.9 | 24.0 |
| Concerns about quality of mains water | 10.2 | *4.7 | 8.5 | 16.6 | 20.5 | *11.2 | **17.8 | — | 9.4 |
| To save on water costs | 12.6 | 13.6 | 17.8 | 17.3 | 11.5 | *10.0 | np | np | 14.9 |
| Water tank rebates | 4.7 | *2.1 | 20.4 | **0.6 | **2.6 | — | np | np | 7.5 |
| Other(b) | 24.8 | 20.7 | 26.2 | 25.0 | 22.2 | *13.3 | *26.4 | 28.7 | 23.7 |

* estimate has a relative standard error of 25% to 50% and should be used with caution

** estimate has a relative standard error greater than 50% and is considered too unreliable for general use

— nil or rounded to zero (including null cells)

np not available for publication but included in totals where applicable, unless otherwise indicated

(a) No regional split between capital city and balance of state/territory for NT and ACT as the sample does not support any breakdown beyond the whole territory.

(b) Other also includes required by building regulations or planning controls and don't know.

(c) Totals do not equal the sum of items in each column as more than one reason can be reported.

## 7 HOUSEHOLDS WITH RAINWATER TANK INSTALLED AT DWELLING(a), By selected attributes—2007 to 2010

| | 2007 | | 2010 | |
|---|---|---|---|---|
| | *Dwelling has tank* | *Dwelling does not have tank* | *Dwelling has tank* | *Dwelling does not have tank* |
| | PROPORTION (%)(b) | | | |
| **Tenure** | | | | |
| Owned outright | 23.7 | 76.3 | 35.3 | 64.7 |
| Being purchased | 17.5 | 82.5 | 27.8 | 72.2 |
| Rented | 8.5 | 91.5 | 12.6 | 87.4 |
| **Dwelling type**(c) | | | | |
| Separate house | 19.6 | 80.4 | 29.2 | 70.8 |
| Semi-detached, row/terrace house, townhouse etc | 5.9 | 94.1 | 9.6 | 90.4 |
| **Household type** | | | | |
| Family household(d) | 18.9 | 81.1 | 28.5 | 71.5 |
| Lone person household | 16.8 | 83.2 | 22.4 | 77.6 |
| Group household | 9.8 | 90.2 | 17.2 | 82.8 |
| **Who pays for water** | | | | |
| Pays all water costs | 19.8 | 80.2 | 29.6 | 70.4 |
| Pays part of the water costs | 10.9 | 89.0 | 14.6 | 85.4 |
| Landlord/someone else pays | 10.2 | 89.8 | 14.4 | 85.6 |
| **Age of dwelling** | | | | |
| Less than 1 year old | 25.8 | 74.2 | 56.7 | 43.3 |
| 1 year to less than 5 years old | 17.1 | 82.9 | 42.6 | 57.4 |
| 5 years to less than 10 years old | 10.6 | 89.4 | 25.3 | 74.7 |
| 10 years to less than 20 years old | 16.2 | 83.8 | 24.0 | 76.0 |
| 20 years old or more | 19.9 | 80.1 | 26.7 | 73.3 |

(a) Includes only dwellings suitable for a rainwater tank and dwellings connected to mains/towns water. Suitable dwellings include separate house, semi-detached, row/terrace house, townhouse etc.

(b) Figures in each row have been calculated as a proportion of the total households with the attribute described in that row for each year.

(c) The dwelling type 'Flat unit or apartment' is not shown as these types of dwellings are unsuitable for installation of rainwater tanks.

(d) Includes one family households and multiple family households with or without non-family members present.

## 8 HOUSEHOLDS THAT TOOK STEPS IN THE LAST 12 MONTHS TO SAVE WATER INSIDE AND OUTSIDE THE DWELLING, By selected attributes—2010

| | *Laundry*(a) | *Kitchen* | *Toilet*(b) | *Bathroom*(c) | *In the garden*(d) | *Outside - other than the garden* | *At least one step* |
|---|---|---|---|---|---|---|---|
| | PROPORTION (%)(e) | | | | | | |
| **Tenure** | | | | | | | |
| Owned outright | 58.8 | 47.2 | 42.5 | 60.1 | 65.9 | 53.6 | 88.4 |
| Being purchased | 56.7 | 44.4 | 41.3 | 62.5 | 65.6 | 56.4 | 88.9 |
| Rented | 48.1 | 39.0 | 35.6 | 53.7 | 48.1 | 37.8 | 78.2 |
| **Dwelling type** | | | | | | | |
| Separated house | 56.7 | 44.2 | 41.2 | 60.9 | 63.0 | 55.1 | 88.0 |
| Semi-detached, row/terrace house, townhouse etc | 49.1 | 45.5 | 38.7 | 56.3 | 53.5 | 43.7 | 83.8 |
| Flat, unit or apartment | 49.3 | 41.0 | 35.5 | 51.9 | 53.0 | 28.0 | 75.1 |
| **Household type** | | | | | | | |
| Family household(f) | 55.5 | 44.2 | 40.0 | 60.8 | 63.2 | 53.7 | 87.3 |
| Lone person household | 54.6 | 43.3 | 41.1 | 55.0 | 58.0 | 40.6 | 81.7 |
| Group household | 48.2 | 37.8 | 35.1 | 51.2 | 47.8 | 34.2 | 77.0 |
| **Who pays for water** | | | | | | | |
| Pays all water costs | 57.2 | 45.7 | 41.8 | 61.3 | 64.7 | 53.8 | 88.4 |
| Pays part of the water costs | 53.5 | 42.5 | 36.6 | 61.1 | 53.6 | 45.1 | 84.5 |
| Landlord/someone else pays/no water costs | 46.3 | 36.5 | 34.6 | 49.1 | 47.3 | 36.1 | 74.4 |
| **Total households** | **55.0** | **43.8** | **40.1** | **59.0** | **61.7** | **49.9** | **85.6** |

(a) Excludes households that do not have a laundry or washing machine at the dwelling.
(b) Excludes households that have no toilet or non flushing toilets only.
(c) Excludes households that have no shower or bathtubs.
(d) Excludes households that do not have a garden.
(e) Figures in each row have been calculated as a proportion of total households that have the attribute described in that row and the facility in that column.
(f) Includes one family households and multiple family households with or without non-family members present.

# 9 HOUSEHOLDS WITH WATER SAVING PRODUCTS—1998 to 2010

| | *NSW* | *Vic.* | *Qld* | *SA* | *WA* | *Tas.* | *NT* | *ACT* | *Aust.* |
|---|---|---|---|---|---|---|---|---|---|
| MARCH 2010(a) | | | | | | | | | |
| **Number ('000)** | | | | | | | | | |
| Water-efficient shower head(b) | 1 770.1 | 1 414.1 | 1 229.6 | 425.7 | 547.4 | 108.0 | 38.0 | 83.9 | 5 616.9 |
| Dual flush toilet | 2 233.5 | 1 858.5 | 1 529.4 | 587.0 | 784.6 | 160.4 | 73.0 | 110.8 | 7 337.4 |
| **Total households**(c) | **2 726.9** | **2 098.5** | **1 702.2** | **659.9** | **892.0** | **205.7** | **81.1** | **132.1** | **8 498.3** |
| **Proportion (%)**(d) | | | | | | | | | |
| Water-efficient shower head(b) | 64.9 | 67.4 | 72.2 | 64.5 | 61.4 | 52.5 | 46.9 | 63.5 | 66.1 |
| Dual flush toilet | 81.9 | 88.6 | 89.9 | 89.0 | 88.0 | 78.0 | 90.0 | 83.9 | 86.3 |
| MARCH 2007(a) | | | | | | | | | |
| **Proportion (%)**(d) | | | | | | | | | |
| Water-efficient shower head(b) | 58.0 | 52.0 | 58.2 | 55.2 | 50.5 | 47.9 | 36.1 | 55.5 | 55.1 |
| Dual flush toilet | 75.5 | 85.1 | 83.0 | 83.7 | 84.7 | 71.8 | 83.4 | 78.3 | 80.9 |
| MARCH 2004(a) | | | | | | | | | |
| **Proportion (%)**(d) | | | | | | | | | |
| Water-efficient shower head(b) | 43.0 | 41.6 | 43.9 | 49.1 | 47.5 | 40.9 | 20.8 | 41.5 | 43.5 |
| Dual flush toilet | 67.9 | 77.8 | 74.7 | 75.9 | 80.5 | 64.5 | 79.4 | 70.8 | 73.6 |
| MARCH 2001(a) | | | | | | | | | |
| **Proportion (%)**(d) | | | | | | | | | |
| Water-efficient shower head(b) | 33.7 | 31.7 | 36.9 | 36.7 | 40.1 | 36.4 | 29.3 | 32.7 | 34.7 |
| Dual flush toilet | 55.5 | 71.2 | 62.1 | 71.8 | 71.3 | 58.1 | 69.2 | 57.6 | 63.8 |
| MARCH 1998(a) | | | | | | | | | |
| **Proportion (%)**(d) | | | | | | | | | |
| Water-efficient shower head(b) | 30.0 | 31.7 | 34.1 | 33.5 | 37.7 | 32.3 | 28.0 | 32.6 | 32.3 |
| Dual flush toilet | 46.2 | 64.2 | 53.1 | 63.2 | 63.1 | 48.1 | 63.0 | 48.1 | 55.2 |

(a) Figures in each row are the number/proportion of households that have one or more of the water saving product described in that row.

(b) Also referred to as 'reduced flow shower head'.

(c) Totals do not equal the sum of items in the column as household may have both products.

(d) The sum of proportions in each column may be greater than 100% as household may have both products.

# 10 MAIN SOURCE OF WATER FOR GARDENING, Households with a garden—2010

| | *NSW* | *Vic.* | *Qld* | *SA* | *WA* | *Tas.* | *NT*(a) | *ACT*(a) | *Aust.* |
|---|---|---|---|---|---|---|---|---|---|
| | NUMBER ('000) | | | | | | | | |
| **Capital city** | | | | | | | | | |
| Mains/town water | 586.7 | 362.7 | 148.6 | 275.6 | 382.1 | 57.9 | — | — | 1 813.6 |
| Rainwater tank | 116.7 | 226.9 | 165.8 | 49.9 | *3.4 | **2.8 | — | — | 565.5 |
| Bore/well | *25.0 | *5.4 | **2.1 | *5.2 | 153.5 | — | — | — | 191.2 |
| River/creek/dam | **5.9 | *5.5 | **2.1 | — | — | **0.7 | — | — | *14.1 |
| Rainwater collected in other container | 12.3 | np | np | np | — | — | — | — | np |
| Grey water | 99.5 | 208.2 | 51.0 | 37.9 | *10.2 | *1.4 | — | — | 408.1 |
| Don't water/rely on rainfall only | 313.4 | 408.1 | 230.2 | 49.2 | 26.3 | 10.3 | — | — | 1 037.6 |
| Other(b) | — | np | np | np | — | — | — | — | np |
| *Total households* | *1 159.4* | *1 225.3* | *601.4* | *418.5* | *575.5* | *73.1* | — | — | *4 053.1* |
| **Balance of state/territory** | | | | | | | | | |
| Mains/town water | 460.1 | 195.1 | 302.0 | 53.2 | 127.8 | 53.4 | — | — | 1 191.6 |
| Rainwater tank | 100.8 | 96.8 | 116.5 | 38.3 | *19.2 | 14.1 | — | — | 385.8 |
| Bore/well | *64.5 | *31.0 | 76.1 | **16.7 | *36.0 | *4.2 | — | — | 228.5 |
| River/creek/dam | 37.7 | *14.7 | *14.5 | *9.4 | *12.0 | *6.8 | — | — | 95.2 |
| Rainwater collected in other container | *3.9 | np | np | np | — | np | — | — | np |
| Grey water | 50.7 | 80.1 | 66.0 | 12.1 | *6.2 | 6.2 | — | — | 221.3 |
| Don't water/rely on rainfall only | 165.2 | 98.7 | 207.5 | 21.8 | *11.0 | 21.6 | — | — | 525.8 |
| Other(b) | **2.8 | np | np | np | **3.0 | np | — | — | np |
| *Total households* | *885.9* | *522.3* | *788.7* | *153.7* | *215.3* | *107.5* | — | — | *2 673.4* |
| **Total state/territory** | | | | | | | | | |
| Mains/town water | 1 046.7 | 557.8 | 450.6 | 328.8 | 509.9 | 111.3 | 50.7 | 61.7 | 3 117.6 |
| Rainwater tank | 217.5 | 323.7 | 282.3 | 88.3 | *22.7 | 16.8 | — | 12.7 | 964.0 |
| Bore/well | 89.5 | *36.3 | 78.2 | *21.9 | 189.5 | *4.2 | np | np | 426.5 |
| River/creek/dam | 43.6 | *20.2 | *16.7 | *9.4 | *12.0 | *7.5 | np | np | 109.6 |
| Rainwater collected in other container | 16.2 | *10.2 | *5.4 | np | — | np | — | *1.0 | 34.2 |
| Grey water | 150.2 | 288.3 | 117.0 | 50.0 | 16.4 | 7.6 | *0.9 | 9.7 | 640.0 |
| Don't water/rely on rainfall only | 478.6 | 506.8 | 437.7 | 71.0 | 37.4 | 31.9 | 8.6 | 27.7 | 1 599.7 |
| Other(b) | **2.8 | *4.3 | **2.2 | np | **3.0 | np | — | — | 15.0 |
| **Total households** | **2 045.2** | **1 747.6** | **1 390.1** | **572.2** | **790.8** | **180.6** | **66.9** | **113.1** | **6 906.4** |

* estimate has a relative standard error of 25% to 50% and should be used with caution

** estimate has a relative standard error greater than 50% and is considered too unreliable for general use

— nil or rounded to zero (including null cells)

np not available for publication but included in totals where applicable, unless otherwise indicated

(a) No regional split between capital city and balance of state/territory for NT and ACT as the sample does not support any breakdown beyond the whole territory.

(b) Other also includes spring and water delivered in a tanker.

## 10 MAIN SOURCE OF WATER FOR GARDENING, Households with a garden—2010 *continued*

| | *NSW* | *Vic.* | *Qld* | *SA* | *WA* | *Tas.* | *NT*(a) | *ACT*(a) | *Aust.* |
|---|---|---|---|---|---|---|---|---|---|
| | PROPORTION (%) | | | | | | | | |
| **Capital city** | | | | | | | | | |
| Mains/town water | 50.6 | 29.6 | 24.7 | 65.9 | 66.4 | 79.3 | — | — | 44.7 |
| Rainwater tank | 10.1 | 18.5 | 27.6 | 11.9 | *0.6 | **3.8 | — | — | 14.0 |
| Bore/well | *2.2 | *0.4 | **0.4 | *1.2 | 26.7 | — | — | — | 4.7 |
| River/creek/dam | **0.5 | *0.4 | **0.4 | — | — | **0.9 | — | — | *0.3 |
| Rainwater collected in other container | 1.1 | np | np | np | — | — | — | — | np |
| Grey water | 8.6 | 17.0 | 8.5 | 9.1 | *1.8 | *1.9 | — | — | 10.1 |
| Don't water/rely on rainfall only | 27.0 | 33.3 | 38.3 | 11.8 | 4.6 | 14.1 | — | — | 25.6 |
| Other(b) | — | np | np | np | — | — | — | — | np |
| **Balance of state/territory** | | | | | | | | | |
| Mains/town water | 51.9 | 37.3 | 38.3 | 34.6 | 59.4 | 49.7 | — | — | 44.6 |
| Rainwater tank | 11.4 | 18.5 | 14.8 | 24.9 | *8.9 | 13.1 | — | — | 14.4 |
| Bore/well | *7.3 | *5.9 | 9.7 | **10.9 | 16.7 | *3.9 | — | — | 8.5 |
| River/creek/dam | 4.3 | *2.8 | *1.8 | *6.1 | *5.6 | *6.4 | — | — | 3.6 |
| Rainwater collected in other container | *0.4 | np | np | np | — | np | — | — | np |
| Grey water | 5.7 | 15.3 | 8.4 | *7.9 | *2.9 | 5.7 | — | — | 8.3 |
| Don't water/rely on rainfall only | 18.6 | 18.9 | 26.3 | 14.2 | *5.1 | 20.1 | — | — | 19.7 |
| Other(b) | **0.3 | np | np | np | **1.4 | np | — | — | np |
| **Total state/territory** | | | | | | | | | |
| Mains/town water | 51.2 | 31.9 | 32.4 | 57.5 | 64.5 | 61.6 | 75.8 | 54.6 | 45.1 |
| Rainwater tank | 10.6 | 18.5 | 20.3 | 15.4 | *2.9 | 9.3 | — | 11.2 | 14.0 |
| Bore/well | 4.4 | *2.1 | 5.6 | *3.8 | 24.0 | *2.3 | np | np | 6.2 |
| River/creek/dam | 2.1 | *1.2 | *1.2 | *1.6 | *1.5 | *4.2 | np | np | 1.6 |
| Rainwater collected in other container | 0.8 | *0.6 | *0.4 | np | — | np | — | *0.9 | 0.5 |
| Grey water | 7.3 | 16.5 | 8.4 | 8.7 | 2.1 | 4.2 | *1.3 | 8.6 | 9.3 |
| Don't water/rely on rainfall only | 23.4 | 29.0 | 31.5 | 12.4 | 4.7 | 17.7 | 12.8 | 24.5 | 23.2 |
| Other(b) | **0.1 | *0.2 | **0.2 | np | **0.4 | np | — | — | 0.2 |

* estimate has a relative standard error of 25% to 50% and should be used with caution

** estimate has a relative standard error greater than 50% and is considered too unreliable for general use

— nil or rounded to zero (including null cells)

np not available for publication but included in totals where applicable, unless otherwise indicated

(a) No regional split between capital city and balance of state/territory for NT and ACT as the sample does not support any breakdown beyond the whole territory.

(b) Other also includes spring and water delivered in a tanker.

## 11 STEPS TAKEN IN THE LAST 12 MONTHS TO SAVE WATER IN THE GARDEN, Households with a garden—2010

| | *NSW* | *Vic.* | *Qld* | *SA* | *WA* | *Tas.* | *NT* | *ACT* | *Aust.* |
|---|---|---|---|---|---|---|---|---|---|
| | NUMBER ('000) | | | | | | | | |
| Use grey water | 260.4 | 457.5 | 179.6 | 106.4 | 63.8 | 11.8 | 3.7 | 15.7 | 1 098.9 |
| Rainwater collected in other container | 26.9 | 46.2 | *9.9 | *3.3 | np | *1.1 | np | *1.7 | 90.5 |
| Use rainwater collected in other container | 35.5 | 42.7 | *12.6 | 7.5 | *8.0 | *1.1 | *1.2 | *2.1 | 110.6 |
| Use mulch | 440.0 | 517.3 | 380.3 | 176.3 | 237.2 | 49.0 | 19.6 | 26.7 | 1 846.4 |
| Plant native/ low water consuming plants | 207.0 | 254.4 | 196.3 | 96.5 | 148.7 | 20.1 | 8.4 | 13.3 | 944.7 |
| Water at cooler times of the day | 291.4 | 157.3 | 169.0 | 116.9 | 169.1 | 30.9 | 15.5 | 7.5 | 957.8 |
| Water more thoroughly but less frequently | 97.3 | 68.2 | 65.9 | 63.7 | 65.1 | 10.4 | 6.3 | *2.1 | 378.9 |
| Only water when necessary | 397.2 | 306.5 | 252.9 | 147.6 | 184.7 | 28.1 | 14.3 | 20.0 | 1 351.3 |
| Don't water lawn/garden | 203.4 | 218.0 | 195.5 | 95.3 | 40.1 | 25.0 | 4.0 | 16.9 | 798.2 |
| Use rainwater from rainwater tank | 125.8 | 203.2 | 194.7 | 80.4 | *10.2 | *3.8 | **0.9 | 6.8 | 625.6 |
| Other steps taken | 86.5 | 90.7 | 52.1 | 45.5 | 61.9 | 4.8 | *2.7 | 7.1 | 351.2 |
| No water saving activities reported/don't know | 859.2 | 601.3 | 570.8 | 169.6 | 282.2 | 83.4 | 29.3 | 47.6 | 2 643.5 |
| **Total households**(a) | **2 045.2** | **1 747.6** | **1 390.1** | **572.2** | **790.8** | **180.6** | **66.9** | **113.1** | **6 906.4** |
| | PROPORTION (%) | | | | | | | | |
| Use grey water | 12.7 | 26.2 | 12.9 | 18.6 | 8.1 | 6.5 | 5.6 | 13.8 | 15.9 |
| Rainwater collected in other container | 1.3 | 2.6 | *0.7 | *0.6 | np | *0.6 | np | *1.5 | 1.3 |
| Use rainwater collected in other container | 1.7 | 2.4 | *0.9 | 1.3 | *1.0 | *0.6 | *1.8 | *1.8 | 1.6 |
| Use mulch | 21.5 | 29.6 | 27.4 | 30.8 | 30.0 | 27.1 | 29.3 | 23.6 | 26.7 |
| Plant native/ low water consuming plants | 10.1 | 14.6 | 14.1 | 16.9 | 18.8 | 11.1 | 12.5 | 11.8 | 13.7 |
| Water at cooler times of the day | 14.2 | 9.0 | 12.2 | 20.4 | 21.4 | 17.1 | 23.2 | 6.7 | 13.9 |
| Water more thoroughly but less frequently | 4.8 | 3.9 | 4.7 | 11.1 | 8.2 | 5.7 | 9.4 | *1.9 | 5.5 |
| Only water when necessary | 19.4 | 17.5 | 18.2 | 25.8 | 23.4 | 15.5 | 21.4 | 17.7 | 19.6 |
| Don't water lawn/garden | 9.9 | 12.5 | 14.1 | 16.7 | 5.1 | 13.8 | 6.1 | 15.0 | 11.6 |
| Use rainwater from rainwater tank | 6.1 | 11.6 | 14.0 | 14.1 | *1.3 | *2.1 | *1.3 | 6.0 | 9.1 |
| Other steps taken | 4.2 | 5.2 | 3.7 | 7.9 | 7.8 | 2.6 | *4.0 | 6.3 | 5.1 |
| No water saving activities reported/don't know | 42.0 | 34.4 | 41.1 | 29.6 | 35.7 | 46.2 | 43.9 | 42.1 | 38.3 |

* estimate has a relative standard error of 25% to 50% and should be used with caution

** estimate has a relative standard error greater than 50% and is considered too unreliable for general use

np not available for publication but included in totals where applicable, unless otherwise indicated

(a) Totals do not equal the sum of items in each column as more than one step can be reported.

## 12 HOUSEHOLDS WHO RECEIVED A GOVERNMENT REBATE OR INCENTIVE IN THE LAST 12 MONTHS(a), By product type—2010

| | *NSW* | *Vic.* | *Qld* | *SA* | *WA* | *Tas.* | *NT* | *ACT* | *Aust.* |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | NUMBER ('000) | | | | |
| Rainwater tank | 27.6 | 23.3 | 42.7 | 8.8 | **1.5 | — | — | **0.8 | 104.6 |
| Washing machine/dishwasher | 98.4 | *8.0 | 58.2 | 54.9 | 30.9 | np | np | — | 251.4 |
| Water efficient taps/shower heads | 42.2 | 112.0 | 48.9 | 14.9 | *4.6 | np | np | *1.2 | 224.9 |
| Dual flush toilet | *5.1 | 10.5 | *7.3 | 7.1 | np | — | np | *2.3 | 32.8 |
| Other(b) | — | 19.0 | *6.4 | 18.4 | *6.1 | np | np | np | 50.8 |
| **Total households**(c) | **161.3** | **160.2** | **142.8** | **95.9** | **40.5** | ***0.9** | ***1.5** | **4.4** | **607.5** |
| | | | | | PROPORTION (%) | | | | |
| Rainwater tank | 17.1 | 14.5 | 29.9 | 9.2 | **3.7 | — | — | **17.3 | 17.2 |
| Washing machine/dishwasher | 61.0 | *5.0 | 40.8 | 57.3 | 76.4 | np | np | — | 41.4 |
| Water efficient taps/shower heads | 26.2 | 69.9 | 34.2 | 15.6 | *11.4 | np | np | *28.5 | 37.0 |
| Dual flush toilet | *3.2 | 6.5 | *5.1 | *7.4 | np | — | np | 53.4 | 5.4 |
| Other(b) | — | 11.9 | *4.5 | 19.2 | 14.9 | np | np | np | 8.4 |

* estimate has a relative standard error of 25% to 50% and should be used with caution

** estimate has a relative standard error greater than 50% and is considered too unreliable for general use

— nil or rounded to zero (including null cells)

np not available for publication but included in totals where applicable, unless otherwise indicated

(a) Includes households that have either received a government rebate/incentive or are currently in the process of applying.

(b) Other also includes grey water system and mulch.

(c) Totals do not equal the sum of items in each column as more then one product can be reported.

# EXPLANATORY NOTES

## INTRODUCTION

**1** The statistics in this publication were compiled from data collected in the Water Use and Conservation Survey conducted throughout Australia in March 2010 as a supplement to the Australian Bureau of Statistics (ABS) monthly Labour Force Survey (LFS). It is a continuation of a series of surveys on this topic conducted since March 1994. The previous Water Use and Conservation survey was conducted in March 2007.

**2** The publication *Labour Force, Australia* (cat. no. 6202.0) contains information about the LFS survey design, scope, coverage and population benchmarks. This information also applies to supplementary surveys. The publication also contains definitions of demographic and labour force characteristics, and information about telephone interviewing.

## SCOPE

**3** The scope of the Water Use and Conservation survey was households in urban, rural and very remote areas in all states and territories of Australia. This is the first time, the survey has included households residing in very remote parts of Australia, namely in Queensland, South Australia, Western Australia and the Northern Territory. The inclusion has minimal impact on Australian level estimates, however it could improve the Northern Territory estimates because previously 20% of Northern Territory households had been excluded.

**4** The Water Use and Conservation survey excludes households in special dwellings (such as hotels, university residences, boarding schools, hospitals, and prisons).

## COVERAGE

**5** The survey's coverage was households in urban, rural and very remote areas in all states and territories of Australia, excluding households in Indigenous Communities.

## DATA COLLECTION

**6** The Monthly Population Survey is based on a multi-stage area of sample of private dwellings (houses, flats, etc.) and a list sample of non-private dwellings (hotels, motels, etc.). The sample for a monthly population survey is approximately 32,000 dwellings but only half of these were included in the Water Use and Conservation survey. After taking into account sample loss, the response rate for the survey was 93%. In total, information was collected from 12,882 fully responding households for the March 2010 survey.

**7** Information was collected through interviews conducted over a two–week period during March 2010. Information was collected from any responsible adult in the household aged 18 years and over who was asked to respond on behalf of the household.

## RELIABILITY OF THE ESTIMATES

**8** Estimates in this publication are subject to sampling and non-sampling errors:

- Sampling error is the difference between the published estimate and the value that would have been produced if all dwellings had been included in the survey. For further information refer to the Technical note.
- Non-sampling error may occur in any collection whether it is based on a sample or a full count such as a census. Sources of non-sampling error include non-response, errors in reporting by respondents or recording answers by interviewers, and errors in coding and processing data. Every effort is made to reduce the non–sampling error by careful design and testing of the questionnaire, training of interviewers, extensive editing and quality control procedures at all stages of data processing and follow up of respondents.

## DATA COMPARABILITY

**9** Prior to 2008, the annual publication *Environmental Issues: People's Views and Practices* (cat. no. 4602.0) focussed on one of three rotating topics each year: Energy Use and Conservation, Waste Management and Transport Use and Water Use and Conservation.

DATA COMPARABILITY *continued*

**10** Now, the three topics under *Environmental Issues: People's Views and Practices* (cat. no. 4602.0) are separate publications with different catalogue numbers. The 2010 publication is called '*Environmental Issues: Water Use and Conservation*' (cat.no 4602.0.55.003). The information contained in this publication is comparable with some of the data collected in 1994, 1998, 2001, 2004, 2007.

**11** Grey water as a household source of water was previously collected and published in *Environmental Issues: People's Views and Practices*, 2007 (cat. no. 4602.0). Care should be taken when comparing 2007 and 2010 estimates because of a change in the 2010 question methodology. The difference between the estimates can be partly attributed to both real world factors and the change in question methodology but the extent of the change in methodology cannot be quantified. The questions on main source of water for gardening were not changed in 2010 and there was a reduction in responses to the grey water question. The estimates for main source of water for gardening can be viewed in Table 10 and may provide a guide to the extent of the impact attributable to real world factors.

**12** The category 'Don't water/rely on rainfall only' is comprised of two populations. The first population includes households that responded 'Don't water' when asked for their main source of water for gardening. Subsequently, this population was not asked about the 'methods used to water the garden'. The second population includes households who responded 'Don't water/rely on rainfall only' when asked about the methods used to water the garden. The second group may also specify other methods to water the garden.

**13** The ABS seeks to maximise consistency and comparability of estimates over time by minimising changes to its surveys. Sound survey practice however, requires ongoing review to maintain the integrity of the data. A few changes were made to the survey between 2007 and 2010. Significant changes, are outlined below.

- Three new data items were collected in the 2010 survey
  - Type of washing machine (top loading, front loading, combination washer, or other).
  - Whether household received a government rebate or incentive for a water saving products.
  - Type of water saving product that received a government rebate or incentive.
- One data item was removed from the from the 2010 survey
  - Whether the swimming pool is filtered or treated.
- The methodology for collecting grey water as sources of household water was changed in the 2010 survey
  - The 2007 survey included a grey water question that prompted for, and gave, an example of grey water use. The 2010 survey removed this question and included grey water as a response category to the main question on what sources of water a household used.

ACKNOWLEDGEMENTS

**14** ABS surveys draw extensively on information provided by individuals, businesses, governments and other organisations. Their continued cooperation is very much appreciated and without it, the wide range of statistics published by the ABS would not be available. Information received by the ABS is treated in strict confidence as required by the *Census and Statistics Act 1905*.

NEXT SURVEY

**15** The ABS plans to conduct this survey again in March 2013.

RELATED PUBLICATIONS

**16** Users may also wish to refer to the following ABS publications:

- *Environmental Issues: People's Views and Practices* (cat. no. 4602.0) – 1992 to 2007 issues
- *Environmental Issues: Waste Management and Transport Use, March 2009* (cat. no. 4602.0.55.002)
- *Environmental Issues: Energy Use and Conservation, March 2008* (cat. no. 4602.0.55.001)
- *Household Water, Energy Use and Conservation, Victoria, October 2009,* (cat. no. 4602.2)
- *Queensland Water and Energy Use and Conservation, October 2009* (cat. no. 4602.3)
- *Environmental Views and Behaviour, 2007-08* (cat.no. 4626.0.55.001)
- *Australia's Environment Issues and Trends, January 2010* (cat.no. 4613.0)
- *Water Account Australia* (cat. no. 4610.0)
- *Measures of Australia's Progress, 2010* (cat. no. 1370.0)

KEY REFERENCES

**17** Further key references on water use and conservation can be found through the following web sites:

Department of Sustainability, Environment, Water, Population and Communities (http://www.environment.gov.au)

Department of Climate Change and Energy Efficiency (http://www.climatechange.gov.au)

Current publications and other products released by the ABS are available on the ABS website. The ABS also issues a daily Release Advice on the website which details products to be released in the week ahead.

DATA CUBE TABLES

**18** All tables in this publication are also available in a Data Cube (spreadsheet format). Additional Water Use and Conservation tables are also available in a Data Cube. For a complete list of tables, please refer to the contents page of the 'Additional Tables' Data Cube.

DATA AVAILABLE ON REQUEST

**19** In addition to the statistics provided in this publication and the Data Cubes, the ABS may have other relevant data available on request. Subject to confidentiality and sampling variability constraints, additional tabulations may be produced from the survey. All inquiries should be made to the National Information and Referral Service on 1300 135 070.

ABBREVIATIONS

| | |
|---|---|
| ABS | Australian Bureau of Statistics |
| ACT | Australian Capital Territory |
| ARA | any responsible adult |
| Aust. | Australia |
| LFS | Labour Force Survey (Australia) |
| MPS | Monthly Population Survey |
| NSW | New South Wales |
| NT | Northern Territory |
| Qld | Queensland |
| RSE | relative standard error |
| SA | South Australia |
| SE | standard error |
| Tas. | Tasmania |
| Vic. | Victoria |
| WA | Western Australia |

## RELIABILITY OF THE ESTIMATES

**1** Since the estimates in this publication are based on information obtained from a sample, they are subject to sampling variability. That is, they may differ from those estimates that would have been produced if all dwellings had been included in the survey. One measure of the likely difference is given by the standard error (SE), which indicates the extent to which an estimate might have varied by chance because only a sample of dwellings (or households) was included. There are about two chances in three (67%) that a sample estimate will differ by less than one SE from the number that would have been obtained if all dwellings had been included, and about 19 chances in 20 (95%) that the difference will be less than two SEs.

**2** Another measure of the likely difference is the relative standard error (RSE), which is obtained by expressing the SE as a percentage of the estimate:

$$RSE\% = \left(\frac{SE}{estimate}\right) \times 100$$

**3** RSEs for estimates from 2010 Environmental Issues: Water Use and Conservation are published in 'direct' form. Previously a statistical model was produced and the information was displayed via a 'SE table'. RSEs for Environmental Issues: Water use and Conservation have been calculated for each separate estimate and published individually. The Jackknife method of variance estimation is used for this process, which involves the calculation of 30 'replicate' estimates based on 30 different subsamples of the original sample. The variability of estimates obtained from these subsamples is used to estimate the sample variability surrounding the estimate.

**4** RSE tables are included in the Data Cube (spreadsheet format) available free-of-charge on the ABS web site <www.abs.gov.au>. For illustrative purposes the RSEs for Table 1 have been included at the end of these Technical Notes.

**5** In this publication, only estimates (numbers and proportions) with RSEs less than 25% are considered sufficiently reliable for most purposes. Estimates with RSEs between 25% to 50% have been included and are preceded by an asterisk (e.g. *3.4) to indicate they are subject to high sample variability and should be used with caution. Estimates with RSEs greater than 50% are preceded by a double asterisk (e.g. **2.1) to indicate that they are considered too unreliable for general use.

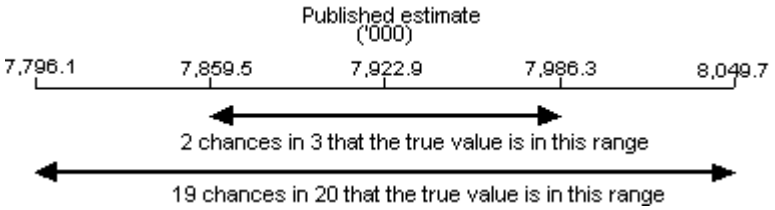
## CALCULATION OF STANDARD ERROR

**6** SEs can be calculated using the estimates (counts or proportions) and the corresponding RSEs. For example, Table 1 shows that the estimated number of households in Australia that have mains or town water as a source of water was 7,922,900. The RSE table corresponding to the estimates in Table 1 (see Relative Standard Errors in the 'Relative Standard Error' section at the end of these Technical Notes) shows the RSE for this estimate is 0.8%. The SE is calculated by:

$$\begin{aligned} SE\ of\ estimate &= \left(\frac{RSE}{100}\right) \times estimate \\ &= \left(\frac{0.8}{100}\right) \times 7,922,900 \\ &= 0.008 \times 7,922,900 \\ &= 63,400 \text{ (rounded to nearest 100)} \end{aligned}$$

**7** There are about two chances in three that the actual number of households using mains or town water as a source of water was in the range of 7,859,500 to 7,986,300 and about 19 chances in 20 that the value was in the range 7,796,100 to 8,049,700. This example is illustrated in the diagram below.

CALCULATION OF STANDARD ERROR *continued*




PROPORTIONS AND PERCENTAGES

**8** Proportions and percentages formed from the ratio of two estimates are also subject to sampling errors. The size of the error depends on the accuracy of both the numerator and the denominator. A formula to approximate the RSE of a proportion is given below. The formula is only valid when the numerator is a subset of the denominator.

$$RSE(\tfrac{x}{y}) = \sqrt{[RSE(x)]^2 - [RSE(y)]^2}$$

**9** As an example, using estimates from Table 1, of the 8,498,300 households in Australia, 93%, that is 7,922,900 households, used mains or town water as a source of water. The RSE for 7,922,900 is 0.8% and the RSE for 8,498,300 is 0.3% (see Relative Standard Errors Table in the 'Relative Standard Error' section at the end of these Technical Notes). Applying the above formula, the RSE for the proportion of households with mains or towns water as a source of water is:

$$RSE(\tfrac{x}{y}) = \sqrt{[0.8]^2 - [0.3]^2} = 0.7\%$$

DIFFERENCES

**10** Published estimates may also be used to calculate the difference between two survey estimates (of numbers or proportions). Such an estimate is also subject to sampling error. The sampling error of the difference between two estimates depends on their SEs and the relationship (correlation) between them. An approximate SE of the difference between two estimates (x–y) may be calculated by the following formula:

$$SE(x-y) = \sqrt{[SE(x)]^2 + [SE(y)]^2}$$

**11** While this formula will only be exact for differences between separate and uncorrelated characteristics or sub populations, it provides a good approximation for all differences likely to be of interest in this publication.

SIGNIFICANCE TESTING

**12** A statistical significance test for any comparisons between estimates can be performed to determine whether it is likely that there is a difference between two corresponding population characteristics. The standard error of the difference between two corresponding estimates (x and y) can be calculated using the formula in paragraph 10. The standard error is then used to create the following test statistic:

$$\left(\frac{|x-y|}{SE(x-y)}\right)$$

**13** If the value of this test statistics is greater than 1.96 then there are 19 chances in 20 that there is a difference in the two populations with respect to that characteristic. Otherwise, it cannot be stated with confidence that there is a difference between the populations.

RELATIVE STANDARD ERROR

**14** Relative Standard Errors for the number and proportion estimates of Table 1 are included below.

SOURCES OF WATER FOR HOUSEHOLDS, Relative standard errors—2010

| | *NSW* | *Vic.* | *Qld* | *SA* | *WA* | *Tas.* | *NT*(a) | *ACT*(a) | *Aust.* |
|---|---|---|---|---|---|---|---|---|---|
| | RSE OF NUMBER (%) | | | | | | | | |
| **Capital city** | | | | | | | | | |
| Mains/town water | 1.0 | 0.7 | 1.7 | 1.0 | 1.6 | 3.9 | — | — | 0.6 |
| Rainwater tank(b) | 8.9 | 5.9 | 6.2 | 5.0 | 13.0 | 36.9 | — | — | 2.8 |
| Purchased bottled water | 4.5 | 7.3 | 7.4 | 6.5 | 7.4 | 16.1 | — | — | 3.2 |
| Bore/Well | 22.5 | 36.6 | 33.3 | 41.5 | 9.0 | 73.9 | — | — | 7.9 |
| River/creek/dam | 72.9 | 41.4 | 35.7 | np | np | 71.8 | — | — | 35.4 |
| Rainwater collected in other container | 15.0 | 12.0 | 47.3 | np | np | — | — | — | 10.4 |
| Grey water | 5.7 | 3.5 | 7.1 | 4.4 | 8.0 | 23.6 | — | — | 2.5 |
| Other(c) | 47.0 | 48.9 | — | np | np | — | — | — | 33.6 |
| *Total households* | *0.6* | *0.7* | *1.0* | *0.8* | *1.1* | *1.3* | — | — | *0.4* |
| **Balance of state/territory** | | | | | | | | | |
| Mains/town water | 3.3 | 5.6 | 3.9 | 9.9 | 6.6 | 6.9 | — | — | 2.2 |
| Rainwater tank(b) | 8.6 | 8.8 | 10.4 | 4.4 | 16.0 | 13.9 | — | — | 5.1 |
| Purchased bottled water | 5.8 | 7.0 | 6.6 | 19.0 | 14.5 | 10.3 | — | — | 2.8 |
| Bore/Well | 23.6 | 28.7 | 20.2 | 46.7 | 24.3 | 25.0 | — | — | 12.8 |
| River/creek/dam | 21.7 | 39.1 | 28.4 | np | np | 26.8 | — | — | 14.8 |
| Rainwater collected in other container | 24.4 | 29.0 | 28.5 | np | np | 32.3 | — | — | 14.3 |
| Grey water | 7.4 | 4.6 | 9.8 | 8.5 | 11.0 | 10.2 | — | — | 3.2 |
| Other(c) | 32.6 | 31.6 | 36.8 | np | np | 39.2 | — | — | 21.2 |
| *Total households* | *1.0* | *1.2* | *0.7* | *1.3* | *1.5* | *1.1* | — | — | *0.5* |
| **Total state/territory** | | | | | | | | | |
| Mains/town water | 1.4 | 1.5 | 2.3 | 2.1 | 2.0 | 4.0 | 3.6 | 1.6 | 0.8 |
| Rainwater tank(b) | 7.4 | 4.8 | 7.3 | 3.6 | 10.3 | 13.0 | 28.5 | 13.1 | 3.1 |
| Purchased bottled water | 3.3 | 5.3 | 5.1 | 6.5 | 6.3 | 9.4 | 20.4 | 14.2 | 2.1 |
| Bore/Well | 20.1 | 23.6 | 19.5 | 37.1 | 8.6 | 23.4 | np | np | 7.5 |
| River/creek/dam | 22.0 | 34.8 | 22.8 | 32.8 | 40.5 | 24.9 | 78.6 | — | 13.6 |
| Rainwater collected in other container | 12.7 | 11.3 | 30.0 | 33.1 | 46.0 | 32.3 | 61.7 | 24.6 | 9.0 |
| Grey water | 4.3 | 3.1 | 6.5 | 4.3 | 5.4 | 10.1 | 20.8 | 8.0 | 2.1 |
| Other(c) | 28.4 | 28.4 | 36.8 | 36.1 | 54.3 | 39.2 | np | np | 18.5 |
| **Total households** | **0.6** | **0.6** | **0.6** | **0.7** | **0.9** | **1.0** | **1.4** | **1.6** | **0.3** |

— nil or rounded to zero (including null cells)

np not available for publication but included in totals where applicable, unless otherwise indicated

(a) No regional split between capital city and balance of state/territory for NT and ACT as the sample does not support any breakdown beyond the whole territory.

(b) Excludes households that have a rainwater tank installed at the dwelling but do not use the tank as a source of water.

(c) Other includes spring and water delivered in a tanker.

SOURCES OF WATER FOR HOUSEHOLDS, Relative standard errors—2010 *continued*

| | *NSW* | *Vic.* | *Qld* | *SA* | *WA* | *Tas.* | *NT*(a) | *ACT*(a) | *Aust.* |
|---|---|---|---|---|---|---|---|---|---|
| | RSE OF PROPORTION (%) | | | | | | | | |
| **Capital city** | | | | | | | | | |
| Mains/town water | 0.8 | 0.4 | 1.4 | 0.4 | 1.1 | 3.4 | — | — | 0.4 |
| Rainwater tank(b) | 8.8 | 5.8 | 6.3 | 5.4 | 12.8 | 37.0 | — | — | 2.8 |
| Purchased bottled water | 4.7 | 7.1 | 7.4 | 6.4 | 7.3 | 16.2 | — | — | 3.2 |
| Bore/Well | 22.5 | 36.5 | 33.4 | 41.5 | 8.9 | 73.9 | — | — | 7.9 |
| River/creek/dam | 72.9 | 41.5 | 35.9 | np | np | 71.8 | — | — | 35.4 |
| Rainwater collected in other container | 15.0 | 12.0 | 47.4 | np | np | — | — | — | 10.5 |
| Grey water | 5.5 | 3.4 | 7.3 | 4.4 | 7.8 | 23.8 | — | — | 2.5 |
| Other(c) | 47.0 | 48.9 | — | np | np | — | — | — | 33.5 |
| **Balance of state/territory** | | | | | | | | | |
| Mains/town water | 2.9 | 5.4 | 3.8 | 9.7 | 6.9 | 6.8 | — | — | 2.1 |
| Rainwater tank(b) | 8.7 | 8.9 | 10.5 | 4.0 | 15.4 | 13.9 | — | — | 5.1 |
| Purchased bottled water | 5.7 | 6.5 | 6.5 | 18.7 | 14.2 | 10.6 | — | — | 2.7 |
| Bore/Well | 23.8 | 28.9 | 20.3 | 46.5 | 24.2 | 24.9 | — | — | 12.7 |
| River/creek/dam | 21.7 | 39.2 | 28.4 | np | np | 26.8 | — | — | 14.9 |
| Rainwater collected in other container | 24.6 | 29.1 | 28.2 | np | np | 32.4 | — | — | 14.4 |
| Grey water | 7.5 | 4.6 | 9.9 | 8.6 | 10.8 | 10.0 | — | — | 3.3 |
| Other(c) | 32.5 | 31.6 | 37.0 | np | np | 39.5 | — | — | 21.3 |
| **Total state/territory** | | | | | | | | | |
| Mains/town water | 1.3 | 1.3 | 2.1 | 2.0 | 1.8 | 3.8 | 3.5 | — | 0.7 |
| Rainwater tank(b) | 7.3 | 4.8 | 7.4 | 3.6 | 10.2 | 13.0 | 28.1 | 12.9 | 3.0 |
| Purchased bottled water | 3.4 | 5.2 | 5.0 | 6.4 | 6.4 | 9.6 | 20.8 | 14.2 | 2.1 |
| Bore/Well | 20.2 | 23.7 | 19.5 | 37.0 | 8.7 | 23.1 | np | np | 7.5 |
| River/creek/dam | 21.9 | 34.9 | 22.9 | 32.8 | 40.5 | 24.9 | 78.6 | — | 13.7 |
| Rainwater collected in other container | 12.8 | 11.3 | 29.8 | 33.1 | 46.1 | 32.4 | 61.5 | 24.8 | 9.0 |
| Grey water | 4.3 | 3.0 | 6.7 | 4.1 | 5.4 | 10.0 | 20.3 | 7.6 | 2.1 |
| Other(c) | 28.3 | 28.5 | 37.0 | 36.0 | 54.3 | 39.4 | np | np | 18.5 |

— nil or rounded to zero (including null cells)

np not available for publication but included in totals where applicable, unless otherwise indicated

(a) No regional split between capital city and balance of state/territory for NT and ACT as the sample does not support any breakdown beyond the whole territory.

(b) Excludes households that have a rainwater tank installed at the dwelling but do not use the tank as a source of water.

(c) Other includes spring and water delivered in a tanker.

# GLOSSARY

| | |
|---|---|
| **Above ground drip system** | A watering system located above the ground, where the water drips or trickles slowly from outlets in a pipe or hose located above ground. |
| **Any Responsible Adult** | The Any Responsible Adult (ARA) method of interviewing involves obtaining information about the in scope household in a selected dwelling from the first responsible adult with whom the interviewer makes contact. In this survey, the ARA provides information on behalf of the household. |
| **Bathtub** | Includes shower/bathtub combinations and indoor spas/hot tubs. |
| **Bore / well** | Water sourced from an artesian bore. Ground-water that is under sufficient pressure to rise above the level at which it encounters a well, but which does not necessarily rise to or above the surface of the ground. |
| **Bottled drinking water** | Water purchased as drinking water for consumption within the household. |
| **Couple** | Two people in a registered or de facto marriage, who usually live in the same household. |
| **Cost of water** | Includes water consumption costs, excess water consumption costs, water taxes, cost of water licence, cost of electricity to pump water to dwelling, and the delivery cost of water. |
| **Dual flush toilet** | A toilet that enables the user to control the amount of water used to flush. It has two settings: full flush and half-flush. |
| **Dwelling** | A suite of rooms contained within a building which are self-contained and intended for long-term residential use. To be self-contained, the suite of rooms must possess cooking and bathing facilities as building fixtures. |
| **Family** | Two or more people, one of whom is at least 15 years of age, who are related by blood, marriage (registered or de facto), adoption, step or fostering, and who usually live in the same household. A separate family is formed for each married couple, or for each set of parent-child relationships where only one parent is present. |
| **Fixed sprinkler system** | A grid or series of sprinklers installed in a lawn or garden to provide coverage of an area without any need to move the sprinklers. |
| **Fluctuating pressure** | Where water pressure changes throughout the day (e.g. strong water pressure at certain times but weak water pressure at other times). |
| **Garden** | A planned space, usually outdoors, set aside for the display, cultivation, and enjoyment of plants and other forms of nature. Excluded from this are balcony gardens, pot plants, any indoor plants and gardens/lawns on council verge areas. |
| **Government rebate / incentive** | State or Federal Government incentives in the form of a monetary refund or free give away to encourage the purchase/use of a water saving product or appliance. A government rebate requires completion of an application form for receipt of a rebate. |
| **Grey water** | Water that is collected or saved after being used in the household, so that it can be reused in another way. |
| **Group household** | A household consisting of two or more unrelated people where all people are aged 15 years and over. There are no reported couple relationships, parent-child relationships or other blood relationships in these households. |
| **Household** | A group of residents of a dwelling who share common facilities and meals or who consider themselves to be a household. It is possible for a dwelling to contain more than one household, for example, where regular provision is made for groups to take meals separately and where persons consider their households to be separate. |
| **Inadequate or low pressure** | Where the flow of water from the taps is weaker or slower than what would normally be expected. |
| **Installed water saving modification** | The installation of a flow restrictor or water efficient taps to reduce the flow rate of water from that tap. |

| | |
|---|---|
| **Lone person household** | A household consisting of a person living alone. |
| **Mains / town water** | Water that is supplied to the dwelling through underground pipes. |
| **Micro spray / mini sprinkler** | A sprinkler or spray system permanently installed in the garden. They have small sprinkler heads or sprays with a narrow range. |
| **Moveable sprinkler** | Usually attached to the end of a hose and can be easily moved around. Also known as hose-end sprinklers. |
| **Multiple family household** | A household containing two or more families. Unrelated individuals may also be present. |
| **Non-family household** | Consists of unrelated people only. A non-family household can be either a person living alone or a group household. |
| **One family household** | A household containing only one family. Unrelated individuals may also be present. |
| **One parent, one family household** | A one family household comprising a lone parent with at least one dependent or non-dependent child. The household may also include other relatives and unrelated individuals. |
| **Rainwater collected in other container** | The use of bins, wine barrels, buckets etc. to collect rainwater, by either leaving the container out in the rain, or by placing container under the down pipes of the house. |
| **Rainwater tank** | A closed container made of corrugated or galvanised iron, plastic, or concrete, for storing rainwater. |
| **Reduced flush volume with water displacement device / adjustment float** | Any action taken by the respondent to reduce the amount of water in the cistern available for flushing. |
| **Private dwelling** | A dwelling that is intended to have people live in it (e.g. house, flat, unit, caravan etc.). |
| **Single flush toilet** | A 'normal' toilet, that is not equipped with a dual-flush mechanism. |
| **Sufficient supply** | Enough water in the rainwater tank to meet the specific needs of the household. For example, If the rainwater tank is installed to supply all the households water requirements and there is enough water to meets the needs of the household. |
| **Usual residents** | Persons who usually live in a particular private dwelling and regard it as their own or main home. Excludes usual residents who were away from the dwelling for more than six weeks altogether and visitors to the dwelling who do not usually live there, do not regard it as their own or main home, but are temporarily staying there. |
| **Underground drip irrigation** | A watering system where the water drips or trickles slowly from outlets in underground pipes. |
| **Water efficient or low flow shower head** | A shower head designed to deliver less water but with pressure comparable to a normal shower head. |
| **Water filter** | Any sort of device used to 'purify' or remove certain chemicals or minerals from drinking water, or to improve its appearance and taste. |
| **Water restrictions on mains water** | A set of mandatory restrictions imposed by state or local governments governing the use of mains water (e.g. restrictions on the use of a hose for water). |

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