Catalogue no.16-002-X

EnviroStats

Fall 2008 Vol. 2, no. 3

In this issue:

Latest indicators

Population 2006 to 2007 Percentage change	1.0%	Particulate matter ($PM_{2.5}$) 2000 to 2005	No significant trend
Gross domestic product June 2008 Percentage change	0.1%	Ground-level ozone 1990 to 2005 Median percent change per year	0.8%
Greenhouse gas emissions 2005 to 2006 Percentage change	-1.9%	Natural resource wealth 2006 to 2007 Percentage change	8.3%

Statistics Canada Statistique Canada

Canada

EnviroStats

Fall 2008 Vol. 2, no.3

EnviroStats is produced under the direction of Robert Smith, Director, Environment Accounts and Statistics Division.

Editor-in-Chief

Michael Bordt

Editor

Jennie Wang

Acknowledgements

Darin Cowan, Danny De Quoy, Monique Deschambault, Giuseppe Filoso, John Flanders, Wilson Freeman, Paula Gherasim, Laurie Jong, Luc Moquin, Michelle Tait, Translation and Terminology Services, Doug Trant and Michael Wright.

EnviroStats:

September 2008

Catalogue no. 16-002-X

ISSN 1913-4320

Frequency: Quarterly

Ottawa

Published by authority of the Minister responsible for Statistics Canada

Version française de cette publication disponible sur demande (nº 16-002-X au catalogue).

Note of appreciation

Canada owes the success of its statistical system to a long-standing partnership between Statistics Canada, the citizens of Canada, its businesses, governments and other institutions. Accurate and timely statistical information could not be produced without their continued co-operation and good will.

Accessing and ordering information

This product, catalogue no. 16-002-X, is available for free in electronic format. To obtain a single issue, visit our website at www.statcan.ca and select Publications.

How to obtain more information

For information about this product or the wide range of services and data available from Statistics Canada visit our website at www.statcan.gc.ca or contact us by email at infostats@statcan.gc.ca or by phone from 8:30am to 4:30pm Monday to Friday at:

Statistics Canada National Contact Centre

Toll-free telephone (Canada and the United States):

Inquiries line	1-800-263-1136
National telecommunications device for the hearing impaired	1-800-363-7629
Fax line	1-877-287-4369
Depository Services Program inquiries line	1-800-635-7943
Depository Services Program fax line	1-800-565-7757

Local or international calls :

Inquiries line	1-613-951-8116
Fax line	1-613-951-0581

Subscription request

To receive notification of the release of this and other related publications, subscribe to *The Daily* by subject (Environment) at www.statcan.ca/english/dai-quo/subs.htm.

To access this and other related publications, please see: www.statcan.ca/environment

Standards of service to the public

Statistics Canada is committed to serving its clients in a prompt, reliable and courteous manner. To this end, the Agency has developed standards of service which its employees observe in serving its clients. To obtain a copy of these service standards, please contact Statistics Canada toll free at 1-800-263-1136. The service standards are also published on www.statcan.ca under About us > Providing services to Canadians.

Symbols

The following standard symbols are used in Statistics Canada publications:

.	not available for any reference period
..	not available for a specific reference period
...	not applicable
0	true zero or a value rounded to zero
0^s	value rounded to 0 (zero) where there is a meaningful distinction between true zero and the value that was rounded
^{p}	preliminary
^{r}	revised
x	suppressed to meet the confidentiality requirements of the *Statistics Act*
^{E}	use with caution
F	too unreliable to be published

Thermostat use in Canadian homes

Gordon Dewis, Environment Accounts and Statistics Division

Canadian households spend a significant amount of their annual income on energy to heat their homes. Rising energy costs and environmental concerns are clear incentives for households to adopt energy conservation measures.

The heating season in Canada varies quite widely, lasting up to ten months in some parts of the country. Thus, adjusting the temperature by just a few degrees at certain times of the day is one way Canadians can reduce their home heating expenses while also reducing their impact on the environment.

Just over half of Canadian households with a thermostat reduced their home's temperature while they slept. Households using a programmable thermostat were more likely to lower home temperatures than those with non-programmable thermostats.

What you should know about this study

This study is based on data from the 2006 Households and the Environment Survey (HES). The survey was conducted to measure the actions of Canadian households with respect to a wide range of environmental behaviours, including home heating practices. Using the HES, a number of socioeconomic and demographic variables, including dwelling type, ownership status, age, education and income, are linked to home heating equipment and temperature controlling behaviours.

Data collection for the 2006 HES took place in conjunction with the Labour Force Survey.

Respondents were asked about the temperature they kept their home while they were at home and awake and while they were asleep.

Although the survey collected this information for both the heating and cooling seasons, this study only examines data for the heating season. Identification of the heating season was left to the respondent and may vary significantly depending on the location of residence.

For detailed data tables related to this study, please see: Statistics Canada, 2008, Catalogue no. 16-001-X, no.6, Ottawa.

Canadians turn down the heat while they sleep

About 6 out of 10 households reported using a forced air furnace as their primary heating system. A quarter used electric baseboards, 5% hot water radiators, and the remaining households used other heating systems such as wood stoves and fireplaces, heat pumps and other equipment.[1]

Most heating systems are regulated by some form of thermostat. In 2006, 90% of Canadian households were able to control their home's temperature using a thermostat (Table 1). Apartments were less likely to be equipped with thermostats to control their unit's heat.

There were some variations between the provinces. In Ontario, for example, 86% of households reported that they had a thermostat in their home compared to 97% of households in Prince Edward Island.

During the heating season, most Canadian households reported that they set their home temperature between 20°C and 22°C when they were at home and awake. Overall, 53% of households reduced the temperature while they slept. Home temperatures were generally kept between 16°C and 18°C when household members were asleep.

About seven households in ten that programmed their thermostat used it to lower the temperature while they slept. Only 46% of households with an unprogrammed or non-programmable thermostat lowered the heat.

Households in Ontario most likely to have a programmable thermostat

In Canada, four out of ten households with a thermostat had one that could be programmed and the majority of these households (83%) did actually program it.

Households in Ontario were the most likely to have a programmable thermostat. Half of the households with thermostats in the province reported they had one that was programmable, followed by the western provinces: Alberta (41%), Manitoba (38%), Saskatchewan (36%) and British Columbia (36%).

Of households in Quebec that had a thermostat, one third reported having a programmable one.

1. Statistics Canada, Households and the Environment Survey, 2006.

Programmable thermostats can reduce energy use

A programmable thermostat allows the user to set up a schedule of temperature settings that take effect at different times of the day. These devices often allow different schedules to be used for weekdays and weekends and some offer the ability to have different schedules depending on whether the system is heating or cooling the home.

Research conducted at the Canadian Centre for Housing Technology in 2003 examined the impact of thermostat temperature settings on gas and electricity consumption[1] by a mid-efficiency gas furnace during both the winter heating and summer cooling seasons.[2] Using a daytime indoor winter temperature of 22°C as the benchmark, reducing the temperature at night to 18°C resulted in a 6.5% savings in natural gas and 0.8% reduced electricity consumption, while reducing the temperature to 16°C at night and when the dwelling is unoccupied during the day resulted in a 13% reduction in the amount of gas used and 2.3% savings in the amount of electricity used.[3]

Some heating systems lend themselves to being controlled by programmable thermostats more readily than others. Households using a forced air natural gas furnace as the main heating system were most likely to have a programmable thermostat (52%). Households with hot water radiators were least likely to report having a programmable thermostat (22%).

For those who can use them, programmable thermostats offer the possibility of saving energy and money by reducing the use of heating and cooling systems when dwellings are unoccupied or at night.

1. Electricity consumed by furnace fans and motors.
2. M. Manning et al., 2005, *The Effects of Thermostat Setting on Seasonal Energy Consumption at the CCHT Research Facility,* Canadian Centre for Housing Technology, http://irc.nrc-cnrc.gc.ca/pubs/rr/rr191/ (accessed July 7, 2008).
3. Canada Mortgage and Housing Corporation, 2005, "Effects of thermostat setting on energy consumption," *Research Highlights,* Technical Series 05-100, Catalogue no. 63816.

Table 1
Households with thermostats, by province, 2006

				Programmable thermostat		Unprogrammed or non-programmable thermostat
	Had a thermostat[1]	Lowered the temperature while the household slept[2]	Had a programmable thermostat[2]	…that was programmed[3]	…that was used to lower the temperature while the household slept[4]	Lowered the temperature while the household slept[5]
	percent					
Newfoundland and Labrador	92	61	21	79	70	59
Prince Edward Island	97	59	23	83	74	56
Nova Scotia	96	57	19	80	74	54
New Brunswick	94	47	21	73	68	43
Quebec	90	53	33	81	69	48
Ontario	86	50	50	85	63	41
Manitoba	94	48	38	78	64	41
Saskatchewan	95	61	36	85	78	54
Alberta	96	57	41	85	75	47
British Columbia	89	56	36	82	73	49
Canada	**90**	**53**	**40**	**83**	**68**	**46**

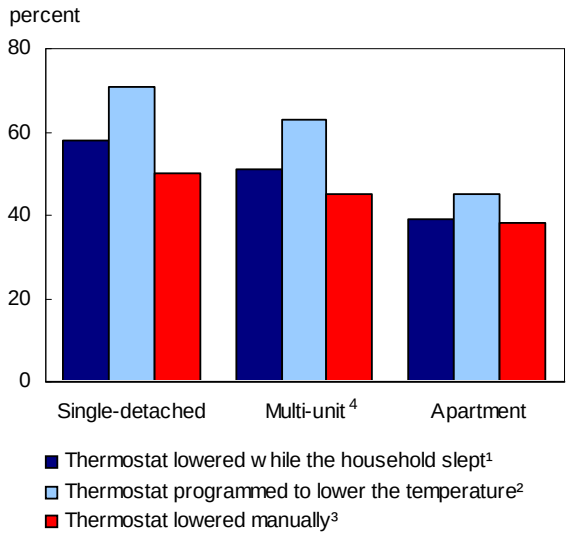
1. As a percentage of all households.
2. As a percentage of all households that had a thermostat.
3. As a percentage of all households that had a programmable thermostat.
4. As a percentage of all households that had a programmable thermostat that was programmed.
5. As a percentage of all households that had an unprogrammed or non-programmable thermostat.

Source(s):
Statistics Canada, Households and the Environment Survey, 2006.

Programmable thermostats were less common in the Atlantic Provinces where about one household in five reported having one.

The rate of households that programmed their thermostats to lower the temperature when household members were asleep varied across the country. Saskatchewan and Alberta had the highest proportion of thermostats programmed to lower temperatures at 78% and 75%, respectively. Ontario and Manitoba had the lowest shares with 63% and 64%, respectively.

Chart 1
Households in single-detached homes most likely to lower temperatures while the household slept



1. As a percentage of households that had a thermostat.
2. As a percentage of households that had a programmed programmable thermostat.
3. As a percentage of households that had an unprogrammed or a non-programmable thermostat.
4. Includes doubles, row units and duplexes.

Source(s):
Statistics Canada, Households and the Environment Survey, 2006.

High-income households most likely to turn down the heat

Among households with thermostats, the likelihood that the temperature was lowered when the household members were asleep increased as the total annual household income increased. Those households with the lowest annual incomes were the least likely to lower the temperature while they slept, with just under half of households earning $30,000 and under reporting this behaviour. The proportion rose to 57% for households that earned between $50,001 and $75,000 a year and to 63% for households with an income above $100,000.

Ownership and use of a programmable thermostat also increased as the total annual household income increased. Only about one in four households in the lowest income category had a thermostat that could be programmed, of which three out of four were programmed. Almost six out of ten of those that were actually programmed were used to lower the temperature.

Of households with incomes ranging from $50,001 to $75,000, 42% had a programmable thermostat. Three quarters of programmed thermostats were used to lower the temperature while the household slept. Households with incomes above $100,000 were most likely to have programmable thermostats (60%). Ninety percent were actually programmed and 80% of those that were programmed were used to lower the temperature.

Households in single-detached dwellings most likely to turn down the temperature

Households in single-detached dwellings were the most likely to turn down the heat, regardless of whether they did so manually or automatically (Chart 1).

Almost half (46%) of households in single-detached dwellings had a programmable thermostat, most of which had been programmed (86%). The majority of these households (71%) used the programmable thermostats to lower their home temperature when household members were asleep. This energy-saving practice was not as prevalent among households in single-detached dwellings equipped with non-programmable thermostats (50%).

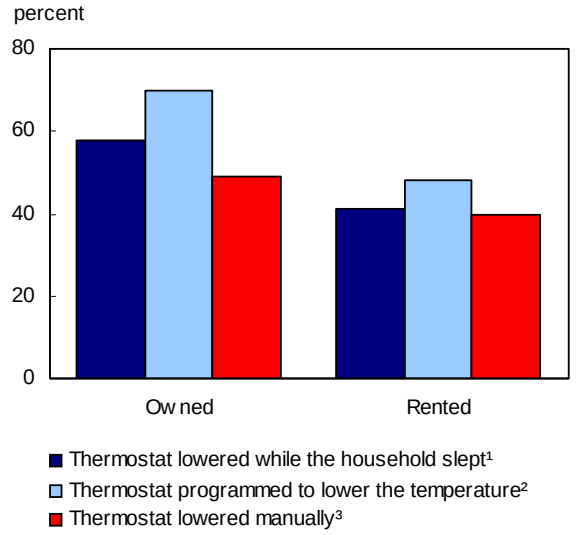
Not only were apartment dwellers less likely to have a thermostat in their unit, but they were less likely to lower the temperature when they were asleep. Only 39% of these households lowered the temperature, though the figure rose to 45% among households that had programmed their programmable thermostat.

Half of households in multi-unit dwellings such as duplexes and row-houses lowered the temperature while they slept. Four in ten households had a programmable thermostat, most of which had been programmed. Of households with programmed thermostats, 63% used them to lower the temperature, compared to 45% of households who controlled the temperature manually.

Renters less likely to turn down the heat

Many renters do not pay directly to heat their dwelling, reducing financial incentives to lower dwelling temperatures at night. If they do choose to turn down the heat, it would be for comfort or environmental reasons rather than to save money.

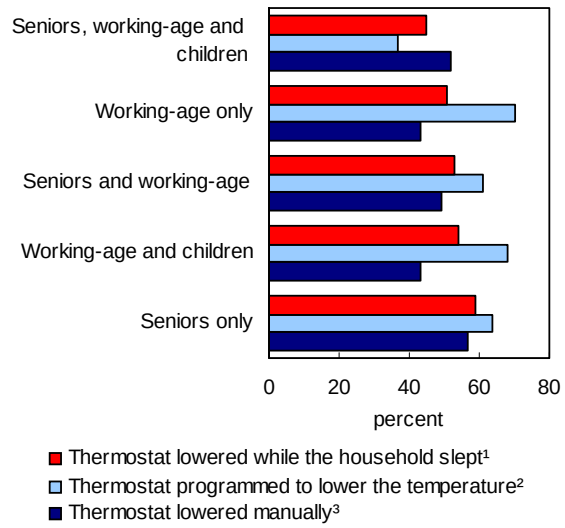
Chart 2
Households that rented less likely to lower the temperature



1. As a percentage of households that had a thermostat.
2. As a percentage of households that had a programmed programmable thermostat.
3. As a percentage of households that had an unprogrammed or a non-programmable thermostat.

Source(s):
Statistics Canada, Households and the Environment Survey, 2006.

Chart 3
Seniors most likely to turn down the heat



1. As a percentage of households that had a thermostat.
2. As a percentage of households that had a programmed programmable thermostat.
3. As a percentage of households that had an unprogrammed or a non-programmable thermostat.

Source(s):
Statistics Canada, Households and the Environment Survey, 2006.

In 2006, two-thirds of Canadian households owned their own home.[2] Households that lived in rental units were less likely to be able to control the temperature of their dwelling than those that owned their dwelling. Three-quarters of those living in rented dwellings had a thermostat, compared to 96% in dwellings owned by the occupants. Owner-occupied dwellings were also over twice as likely to have had a programmable thermostat (46%) as rented dwellings (22%). Most renters have a limited financial interest in investing money to improve a dwelling they do not own.

Almost six out of ten households that owned their home lowered the temperature while they slept compared to just over four out of ten households that were renters (Chart 2). Seven out of ten programmed thermostats in dwellings owned by the occupants were used to lower the temperature when the household was asleep compared to slightly less than half in rentals.

Seniors most likely to lower temperature when asleep

Senior-only households were the least likely to have a programmable thermostat (34%). However, this isn't to say that seniors weren't careful when it came to conserving energy by lowering the temperature of their home. They were the most likely to lower the temperature while they slept (59%; Chart 3).

Senior-only households were the least likely to have programmed their programmable thermostat if they had one (72%). But these households were most likely to manually lower the setting on their thermostat before going to bed (57%).

Households made up of adults between the ages of 18 and 64 and children under the age of 18 were among the most likely to have a programmable thermostat. Two-thirds of these households with programmed thermostats used them to lower the temperature when they were asleep.

2. Statistics Canada, 2008, "Housing and shelter costs," *Census of Population,* www12.statcan.ca/english/census06/release/release_housingshelter.cfm (accessed August 1, 2008).

University graduates most likely to lower temperatures

The likelihood that the thermostat would be lowered while the household was asleep was higher in households where at least one member had a post-secondary education. University graduates were the most likely to lower home temperatures (58%), followed by households with some post-secondary education (52%). Of households with a high school education or less, 48% lowered temperatures.

Programmable thermostats were also more likely to be used by households with a higher education. Households in which a member of the household had graduated from university were most likely to have a programmable thermostat, with slightly less than half (47%) reporting having one of these devices. They were also the most likely to have programmed the device (88%). Three-quarters of these programmed thermostats were used to lower the temperature while the household slept.

Households in which no person had graduated from high school were the least likely to have had a programmable thermostat (29%). If these households did have a programmable thermostat, they were least likely to have programmed it (72%) or to have used it to lower the temperature when asleep (51%).

There was little variation between education groups when it came to lowering the thermostat manually.

Summary

Programmable thermostats offer home owners the ability to automatically regulate the temperature of their dwellings, which can save both money and energy. Seniors and those with low income or lower levels of education were less likely to use programmable thermostats.

Households that had a programmable thermostat were likely to use it to conserve energy by lowering home temperatures while the household slept. However, even those without programmable thermostats may lower night-time home temperatures. Seniors were especially likely to turn down the heat manually.

Who uses water-saving fixtures in the home?

William David Gibbons, Income Statistics Division

Canadians use a large amount of water during their day to day activities. Environment Canada estimates that in 2004, the average individual consumed 329 litres of water per day.[1] Toilets (31%) and showers (19%) account for approximately half of the total indoor water consumed.[2] Retrofitting or replacing these fixtures with water-saving models can provide a starting point for households looking to cut back on water use.

Households may conserve water for a number of reasons. Residents might be motivated by the financial savings from reduced water usage. In the case of shower heads, energy costs can be lowered since less natural gas, electricity or other fuel is used to heat the water. Retrofitting programs and rebates may also play a role.[3] Other households look to reduce their impact on the natural environment. Finally, the use of water-saving fixtures may not even be voluntary, as some regions require their use—as mandated in a Building Code, for example.

An increasing number of Canadian households are using reduced volume toilets and low-flow shower heads at home. Certain factors were found to be associated with increased use of water-saving fixtures including higher household income, ownership status and living in a single-detached home.

Nationally, there was a substantial increase in the use of water-saving fixtures between 1994 and 2006. The percentage of households with a low-flow shower head rose from 44% to 57%. The use of reduced volume toilets increased substantially as well, more than doubling from 15% in 1994 to 37% in 2006.

What you should know about this study

This article uses data from the 1994 and 2006 Households and the Environment Surveys (HES). The HES contains information on a wide range of environmental behaviours, including the use of water-saving shower heads and toilets. A variety of demographic and socio-economic variables have been linked to the use of these fixtures to examine a number of different relationships, including geographic location, income and dwelling type.

Both versions of the HES were supplemental to the Labour Force Survey (LFS) and followed the LFS methodologies during the years administered.

Definitions:

A **low-flow shower head** is any shower head that reduces the water flow and therefore reduces water and water heating costs.

A **reduced volume toilet** is a water-saving, low volume toilet or modified toilet tank including toilets specifically designed to use less water per flush as well as toilets that have been modified by, for example, adding a brick or weighted plastic bottle in the toilet tank to reduce the volume of water in the tank.

Data for the survey was self–reported and water-use standards for low-flow showers and reduced volume toilets were not specified. A new toilet sold commercially in 2006 was considered a 'water-saving' model if it used less than 6 litres per flush, whereas in 1994, a conservation model used less than 13 litres per flush. In addition, households may also have self-modified their fixtures in a number of ways.

Any differences between the results published in this study and those in other Statistics Canada products are due to the exclusion here of respondents who provided no answers to the survey questions on the presence of low-flow shower heads and water-saving toilets in the calculation of use rates for these fixtures.

Water and energy prices rose quicker than average between 1994 and 2006.[4] Increasing relative costs may have provided a financial signal for households to retrofit to water-saving fixtures.

Water availability and use

Canada is fortunate to have an abundance of freshwater. Canadians have the largest per capita

1. Environment Canada, 2007, *Municipal Water Use Report: 2004 Municipal Water Use Statistics*, www.ec.gc.ca/WATER/en/info/pubs/sss/e_mun2004.pdf (accessed July 22, 2008).
2. Peter W. Mayer and William B. DeOreo, 1999, *Residential End Uses of Water*, American Water Works Association Research Foundation, Denver.
3. For example, Natural Resource Canada, 2008, *Retrofit Your Home and Qualify for a Grant!,* www.oee.nrcan.gc.ca/residential/personal/retrofit-homes/retrofit-qualify-grant.cfm (accessed July 25, 2008).
4. The prices of water (+55%), natural gas (+97%), electricity (+30%) and heating oil (+126%) all increased between 1994 and 2006. The economy-wide inflationary rate between these periods was 27%. Statistics Canada, Table 326-0021- Consumer price index, 2005 basket, (2002=100), CANSIM (database), http://cansim2.statcan.ca/cgi-win/cnsmcgi.exe?Lang=E&CANSIMFile=CII\CII_1_E.htm&RootDir=CII/ (accessed November 29, 2007).

supply of freshwater amongst industrialized nations. With less than 0.5% of the total world population, Canada possesses 7% of the total renewable water flow and 25% of wetlands.[5]

Despite the vast amount of water in Canada, some areas still struggle with water availability. Over 85% of the population lives within 300 km of the US border, whereas 60% of the water flows towards the sparsely-populated north.[6]

This uneven distribution places many competing demands on local sources, which can result in both seasonal and chronic shortages. For example, over one-quarter of Canadian municipalities reported water shortages in the five years preceding 1999, a problem that has likely been exacerbated further by additional socio-demographic pressures in recent years.[7]

Providing clean water is a costly undertaking. In 2006, local governments spent over $4.5 billion to purify and supply water.[8]

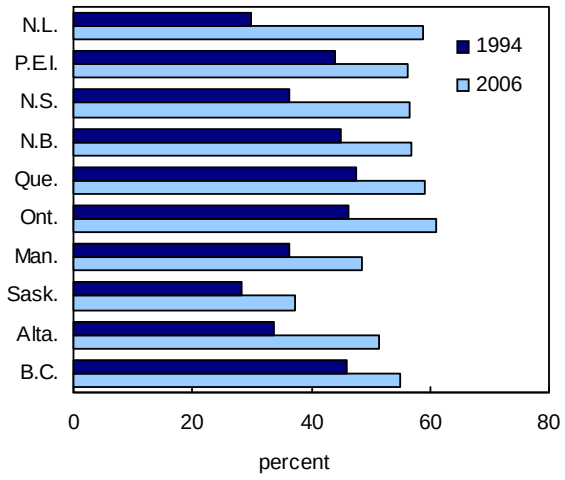
Canadians are also large water consumers from an international perspective. In 2001, Canada ranked 28th out of 29 industrialized countries in per capita water consumption, only ahead of the United States.[9]

Ontario leads the way

In 2006, Ontario had the highest proportion of households using water-saving fixtures. Use of low-flow showers rose from 46% in 1994 to 61% in 2006, while use of reduced volume toilets more than doubled from 19% to 44% (Charts 1 and 2).

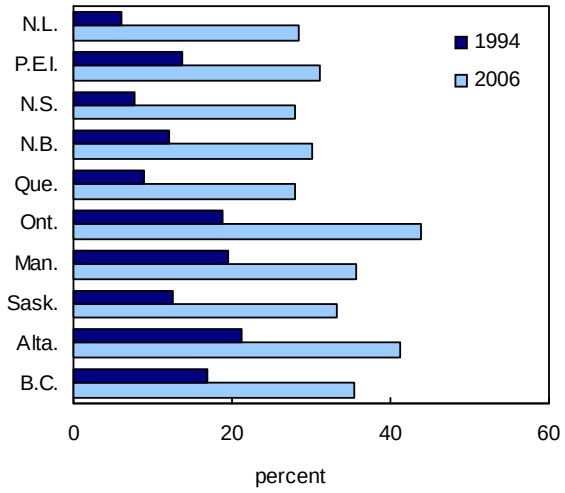
Many factors may have contributed to the increase in water-saving fixture use in Ontario. For example,

Chart 1
Households in Eastern provinces more likely to use low-flow shower heads, 1994 and 2006



Source(s):
Statistics Canada, Households and the Environment Survey, 1994 and 2006.

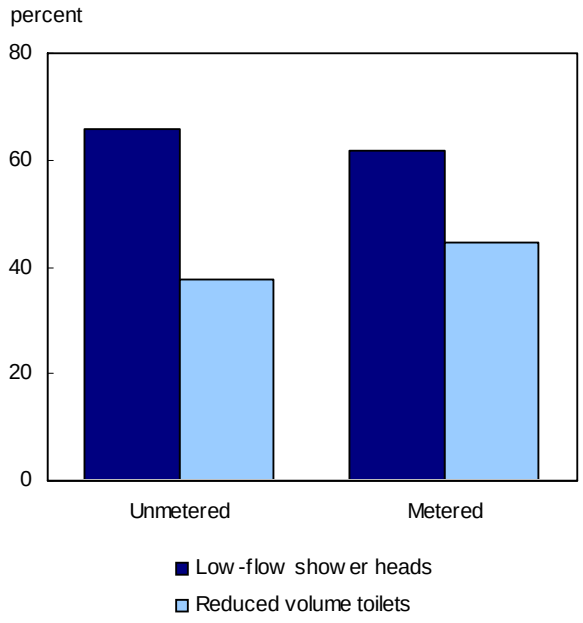
Chart 2
Households in Ontario and the West lead the way on reduced volume toilets, 1994 and 2006



Source(s):
Statistics Canada, Households and the Environment Survey, 1994 and 2006.

5. Statistics Canada, 2003, "Water in Canada," *Human Activity and the Environment,* Catalogue no. 16-201-X, Ottawa.
6. Environment Canada, 2006, *Quickfacts,* www.ec.gc.ca/water/en/e_quickfacts.htm (accessed July 21, 2008).
7. Environment Canada, 2001, *Urban Water Indicators: Municipal Water Use and Wastewater Treatment*, http://dsp-psd.communication.gc.ca/Collection/En1-19-2001-1E.pdf (accessed July 22, 2008)
8. Statistics Canada, Table 385-0003 - Local government revenue and expenditures, CANSIM (database), http://cansim2.statcan.ca/cgi-win/cnsmcgi.exe?Lang=E&CANSIMFile=CII\CII_1_E.htm&RootDir=CII/ (accessed August 18, 2008).
9. David Boyd, 2001, *Canada vs. the OECD: An Environmental Comparison,* University of Victoria, www.environmentalindicators.com/htdocs/indicators/6wate.htm (accessed July 23, 2008).

Chart 3
Metered households are more likely to use reduced volume toilets, 2006



Source(s):
Statistics Canada, Households and the Environment Survey, 2006.

regulatory changes to the Ontario Building Code in 1996 made the use of water-saving fixtures mandatory for all new structures.[10]

Since this change, Ontario has seen extensive amounts of new residential construction. Almost half a million new residential units were completed from 1997 to 2006.[11] This new construction could be behind much of the increase in water-saving fixtures seen in Ontario.

In general, low-flow shower heads were more popular in Eastern Canada than in the west. In 2006, 59% of households in Quebec and 57% in the Atlantic provinces used low-flow showers, compared to 51% of households in the four Western Provinces.

Table 1
Income and conservation fixture use, 1994 and 2006

	Housholds using fixture			
	1994	2006	1994	2006
	Low-flow shower heads		Reduced volume toilets	
Income level	percentage			
Less than $25,000	28	52	10	33
$25,000 to $75,000	44	57	15	35
Greater than $75,000	56	65	20	45

Source(s):
Statistics Canada, Households and the Environment Survey, 1994 and 2006.

Table 2
Home ownership and conservation fixture use, 1994 and 2006

	Households using fixture			
	1994	2006	1994	2006
	Low-flow shower heads		Reduced volume toilets	
Ownership status	percentage			
Owned	52	63	19	43
Rented	31	45	8	23

Source(s):
Statistics Canada, Households and the Environment Survey, 1994 and 2006.

While households in Eastern Canada made greater use of low-flow showers, with the exception of Ontarians, they were less likely than Westerners to use reduced volume toilets. In 2006, 30% of households in Atlantic Canada and 28% of households in Quebec used these fixtures, compared to 37% in the four Western provinces. This difference may be attributable to the lower presence of water meters. The metering rate in the Atlantic region (45%) and Quebec (20%) was significantly lower then in Ontario (86%) and in the west (72%).[12]

Pay per use

Households that were metered were more likely to use reduced volume toilets, but the same trend was not found for shower heads (Chart 3). In 2006, close to 45% of metered households used reduced volume toilets compared to 38% of unmetered households. In contrast, 62 % of metered households used low-

10. City of Toronto, 2002, *Toronto's Water Efficiency Plan,* Works and Emergency Services, Veritec Consulting Limited, www.toronto.ca/watereff/plan.htm (accessed July 24, 2008).
11. Statistics Canada, Table 027-0017 - Canada Mortgage and Housing Corporation, mortgage loan approvals, new residential construction and existing residential properties, monthly, CANSIM (database), http://cansim2.statcan.ca/cgi-win/cnsmcgi.exe?Lang=E&CANSIMFile=CII\CII_1_E.htm&RootDir=CII/ (accessed Nov 28, 2007).
12. Based on households that did not live in an apartment and whose main source of water was supplied by their city, town or municipality.

flow showerheads compared to 66% of unmetered households.

Many Canadians do not pay directly for water based on the amount they consume. Instead, they pay for water at a flat rate or have it included in their rent, and therefore have no economic incentive to conserve water. According to Environment Canada, in 2004 Canadians paying flat rates used 76% more water than those charged using volume-based rates.[13]

For those who do pay directly based on water consumption, the cost of retrofitting can be returned over time, in terms of reduced water bills. Low-flow shower heads provide a more immediate payback since they also reduce energy use, which may explain why they are more common than reduced volume toilets.[14]

Income, home ownership and fixture use

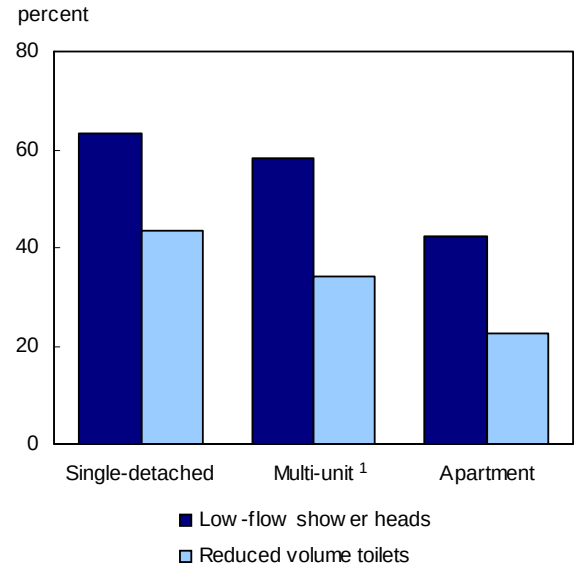
In general, higher income was associated with greater use of water-saving fixtures (Table 1). In 2006, households with annual incomes below $25,000 were less likely to use both low-flow showers (52%) and reduced volume toilets (33%) than those that had annual incomes in excess of $75,000.

Income also influences whether households are able to purchase a dwelling. Households that owned their dwelling had double the median income ($80,000) than those that lived in rental accommodations ($40,000) and were far more likely to use water-saving fixtures (Table 2).

In 2006, 63% of households that owned their dwelling used a low-flow shower head and 43% had a reduced volume toilet. In comparison, 45% of households that rented had a low-flow shower head and 23% a reduced volume toilet. Renters do not always have control over the type of water fixtures used in their dwelling, nor are they usually responsible for water bills, so there is less motivation for these households to spend the money or time to retrofit.

Nevertheless, in 2006, households that rented were also more likely to have reduced volume toilets and low-flow showers than in 1994. Since landlords are frequently responsible for water bills, they have an incentive to install low-flow fixtures.

Chart 4
Households in single-detached dwellings more likely to use water-saving fixtures, 2006



1. Includes doubles, row units and duplexes.
Source(s):
Statistics Canada, Households and the Environment Survey, 2006.

Households in single-detached dwellings use water-saving fixtures more often

Households living in apartments were least likely to have water-saving fixtures (Chart 4). In 2006, 42% of households in apartments and 58% of households in multi-unit dwellings used low-flow shower heads compared to 63% of households in single-detached dwellings. This was again repeated for reduced volume toilets, with 43% of households in single–

13. Environment Canada, 2008, "How do we use it?," *Did you know? Freshwater Facts for Canada and the World,* www.ec.gc.ca/water/en/info/facts/e_domestic.htm (accessed July 24, 2008).
14. A low-flow shower head typically costs from $15 to $50 and requires little time to install. The annual household water and energy savings from this switch can result in $150+ dollars of utility savings in the first year. See: BC Hydro, 2004, *Low Flow Shower Heads,* www.bchydro.com/powersmart/elibrary/elibrary699.html (accessed July 28, 2008).
Replacing a toilet can cost anywhere from $100 to $1000 or more. The low price of water in many areas usually results in toilet replacement projects taking 5 to 10 years or more to repay the initial investment. See: Canadian Mortgage and Housing Corporation, 2002, *Dual Flush Toilet Testing*, www.cmhc-schl.gc.ca/publications/en/rh-pr/tech/02-124-e.html (accessed July 28, 2008).

detached homes using these fixtures, nearly double the rate of apartment dwellers (23%).

These findings are consistent with many of the other results—metering was less common in multi-units and apartments, and the rate of home ownership for single-detached dwellings (92%) was far above that of multi-units (58%) and apartments (20%).

Summary

Municipalities and citizens alike are participating in water conservation efforts. An increasing number of Canadians are using more efficient fixtures in their homes. Water-saving toilets and shower heads became more prevalent between 1994 and 2006.

Households' motivation for using water-efficient fixtures may be based on cost savings, environmental concerns, legal requirement or a combination of such factors.

From a geographic perspective, Ontario led the way in the use of both fixtures. The Atlantic provinces and Quebec were more likely to use low-flow shower heads whereas the Western provinces were more likely to use reduced volume toilets.

A number of other factors were also found to be associated with the use of water-saving fixtures, including higher household income, ownership status and dwelling type.

Conventional tillage: How conventional is it?

Nancy Hofmann, Environment Accounts and Statistics Division

Tillage involves preparing soil for planting or seeding by plowing, cultivating or otherwise turning it. Tillage loosens and aerates the soil, which allows for the deeper penetration of roots. It controls weeds and mixes organic matter, fertilizer and manure with the soil. However, tillage can contribute to the loss of soil moisture, lead to increased wind and water erosion and consume significant amounts of fuel.

In recent years, farming practices have changed due to the need to reduce water loss, soil erosion and costs. What was once the conventional approach to tillage is now less common, particularly in the Prairie provinces.

Which method is best? Advantages and disadvantages

Farmers in Canada use conventional tillage, conservation tillage and no-till seeding practices (see Textbox for definitions). Each approach has advantages and disadvantages, but the best method depends on specific conditions such as climate, soil and crop types to be planted.[1]

One advantage of conventional tillage is that the needed machinery is widely available and the techniques are well-known to farmers. Newer methods may require the purchase of new equipment or attachments and often a learning effort on the part of the farmer.

Conventional tillage can increase porosity and loosen soil, allowing for good air exchange and root growth. It is also an effective way of incorporating manure and breaking up sod fields.[2] As well, soils that are tilled typically warm faster in the spring than those with less tillage.

However, the limited amount of residue left on fields from conventional tillage and to a lesser extent conservation tillage leaves soils more vulnerable to wind and water erosion. Crop residue protects the soil surface and slows run-off (increasing water infiltration). Organic matter in crop residue also helps trap moisture, reduce water evaporation and prevent soil from drying out. In areas where soil moisture is a limiting factor, reducing tillage can be very beneficial at limiting moisture loss and thus improving yields.[3]

What you should know about this study

This study uses tillage data from the Census of Agriculture. Since 1991, the Census has tracked three types of tillage. No-till and conservation tillage are relatively new concepts and data is only available starting in 1991. Data are presented by province and by sub-sub-drainage area.

Definitions

Conventional tillage, conservation tillage and no-till (or zero-till) are defined by the amount of crop residue left on the ground. Crop residue is the vegetative material, often referred to as trash or litter, left after a crop has been harvested. It can include straw, stubble, leaves, stalks, etc. Some crops, such as corn, typically produce more residue than others.

Conventional tillage incorporates or buries most of the crop residue into the soil. Typically this approach involves multiple passes in fields. The moldboard plow is often used first, followed by other implements. Since this method plows under much of the crop stubble, it leaves the surface relatively bare and without cover protection.

Tillage that retains most of the crop residue on the surface and involves minimal tillage is known as **conservation tillage**. Some straw, stubble, leaves, and other residue are visible on the surface.

Seeding that involves direct seeding into crop residue/soil is known as **no-till or zero-till.** The no-till approach avoids any mechanical tillage of the soil and attempts to keep soil disturbance to an absolute minimum. In contrast to the multiple passes of equipment in the conventional approach, no-till can involve just one pass through the fields for planting.

1. For further reading please visit: Ontario Ministry of Agriculture, Food and Rural Affairs, 2002, *Agronomy Guide for Field Crops,* www.omafra.gov.on.ca/english/crops/pub811/p811toc2.htm (accessed July 8, 2008).
   Alberta Agriculture and Rural Development, 2006, *Beneficial Management Practices: Environmental Manual for Crop Producers in Alberta – Chapter 3 Cropping Practices,* www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/agdex9330 (accessed July 9, 2008).
2. Ontario Ministry of Agriculture, Food and Rural Affairs, 2002, *Soil Management and Fertilizer Use: Tillage Systems,* www.omafra.gov.on.ca/english/crops/pub811/2tillsys.htm (accessed July 8, 2008).
3. Ontario Ministry of Agriculture, Food and Rural Affairs, 2008, "Soil management," *Field Crop Production: Understanding the Basics,* www.omafra.gov.on.ca/english/environment/field/basics.htm (accessed July 8, 2008).

Table 1
Percentage of total land prepared for seeding, 1991 and 2006

	1991				2006			
	Total area seeded				Total area seeded			
	Conventional tillage	Conservation tillage	No-till	Total area prepared for seeding	Conventional tillage	Conservation tillage	No-till	Total area prepared for seeding
	percentage			hectares	percentage			hectares
Newfoundland and Labrador	84	8	8	2,050	88	6	6	2,381
Prince Edward Island	91	8	1	111,720	78	19	3	109,972
Nova Scotia	88	8	4	31,664	66	20	14	26,656
New Brunswick	85	13	2	61,681	78	16	6	65,731
Quebec	85	12	3	851,921	62	29	10	1,129,051
Ontario	78	18	4	2,508,344	44	25	31	2,699,477
Manitoba	66	29	5	4,219,049	43	35	21	3,890,618
Saskatchewan	64	26	10	13,034,981	18	22	60	13,348,192
Alberta	73	24	3	7,966,393	25	28	48	7,578,201
British Columbia	84	12	5	240,964	55	26	19	198,472
Canada	**69**	**24**	**7**	**29,028,767**	**28**	**26**	**46**	**29,048,751**

Note(s):
Percentages may not add up due to rounding.
Source(s):
Statistics Canada, 2007, *Selected Historical Data from the Census of Agriculture: Table 5.1,* www.statcan.ca/english/freepub/95-632-XIE/2007000/histmenu-en.htm (accessed July 3, 2008).

The greater the level of tillage, the greater the loss of soil organic matter. Organic matter is important for supporting beneficial biologic activity such as bacteria, fungi and earthworms that help cycle nutrients and increase the speed of pesticide breakdown. Soil organic matter also plays a role in climate change, since organic matter stores carbon.

By lowering the number of passes through the fields with conservation tillage or no-till, farmers realize significant savings in fuel and labour. Nationally, total fuel expenditures and repair costs on farms using no-till systems were approximately one third that of those in typical conventional tillage in 2006.[4] Reduced use of fuel not only lowers costs, but also reduces air pollution.

Areas at a high risk of erosion, such as sloping land, land exposed to wind erosion and land with light-textured soils, are better suited to reduced tillage systems. Some crops are also more easily grown than others using reduced tillage. Cereal grains, oil seeds and beans are far more common candidates for these new practices than corn or potatoes. In fact, it is typically believed that potatoes can not be effectively grown with a no-till approach,[5] but this may change as a result of on-going research.

Conventional tillage becoming less conventional

From 1991 to 2006, the total area prepared for seeding in Canada using the conventional approach dropped by 60% or 12 million hectares—an area over 2.5 times the size of Switzerland. By 2006, conventional tillage had lost its status as the number one tillage option, and was the second most popular system behind no-till—only slightly more popular than conservation tillage.

With the exception of Newfoundland and Labrador, all provinces experienced a decline in the total area seeded using conventional tillage. The largest drops occurred in Saskatchewan and Alberta, where the area tilled by conventional tillage dropped by about 70%, or almost 10 million hectares.

Nationally, conventional tillage was practiced on 28% of all land prepared for seeding in 2006;

4. Statistics Canada, 2006 Census of Agriculture, special tabulation.

5. Ontario Ministry of Agriculture, Food and Rural Affairs, 2008, "Soil management," *Field Crop Production: Understanding the Basics,* www.omafra.gov.on.ca/english/environment/field/basics.htm (accessed July 3, 2008).

however, there were significant provincial differences. Conventional tillage ranged from a high of 88% of the seeded area in Newfoundland and Labrador to a low of 18% in Saskatchewan (Table 1).

Conventional tillage was the most common approach in the Atlantic provinces, Quebec, Ontario, Manitoba and British Columbia. With just 25%, Alberta had the second lowest proportion of land prepared for seeding using conventional tillage, behind Saskatchewan. These two Prairie provinces greatly influence the national rates since they contain a significant portion of Canada's seeded land. Seven out of every ten hectares of seeded land was found in either Alberta or Saskatchewan in 2006.

No-till gaining popularity

Nationally, the proportion of land prepared for seeding using no-till practices increased from 7% to 46% from 1991 to 2006 (Table 1). The largest gains in no-till occurred in Saskatchewan and Alberta, but no-till seeding also increased rapidly in Ontario, Manitoba and British Columbia. In Saskatchewan, the use of no-till increased from 10% of the total area prepared for seeding in 1991 to 60% in 2006, while in Alberta it rose from 3% to 48%.

The Prairies embrace no-till

Many farmers have recognized the environmental and financial benefits that no-till provides for their crops. Map 1 presents tillage practices by drainage area[6] and portrays the geographic concentration of no-till in the relatively dry Prairie region.

British Columbia, Alberta, Saskatchewan and Nova Scotia are home to 55 sub-sub-drainage areas (SSDA) that used the no-till approach for 56% or more of the total area prepared for seeding. Over three-quarters of these 55 SSDAs were found in Saskatchewan alone.

Generally speaking, in Eastern Canada and British Columbia, most SSDAs areas reported between 0 and 30 percent of the total area seeded using the no-till approach. However, exceptions occurred in parts of British Columbia, Southern Ontario, and central Nova Scotia. Alberta had the most variety with some clusters of drainage basins embracing no-till, while others used it to a lesser extent (Map 1).

Modest growth nationally in conservation tillage

In 2006, 26% of the total area prepared for seeding in Canada was completed using conservation tillage, up just two percent from 1991. Conservation tillage, the second most popular approach in 1991, dropped to third place in 2006, behind no-till and conventional tillage.

In 2006, 337,000 more hectares were seeded using conservation tillage than in 1991. Significant gains in the area tilled using conservation methods occurred in Ontario (225, 000 ha), Quebec (217,000 ha), Alberta (164,000 ha) and Manitoba (162,000 ha), but these increases in conservation tillage were offset by a decline of 472,000 ha in Saskatchewan.

Few areas use only conventional tillage

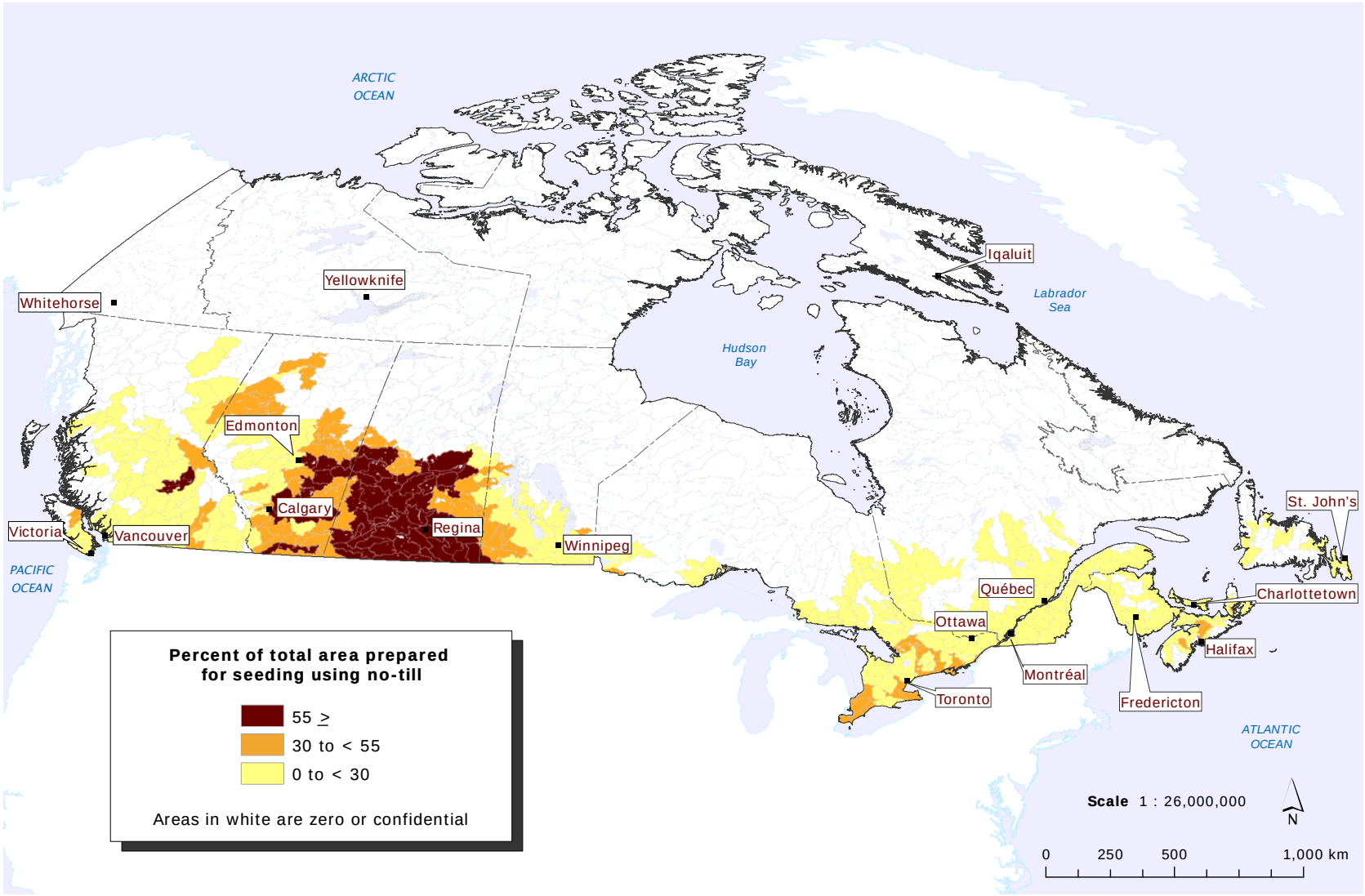
Across the country, there were just 27 SSDAs where all land was prepared for seeding using conventional tillage—with no conservation tillage or no-till seeding. These SSDAs were scattered across with country.

Summary

No one tillage system is best for all Canadian farms because there is so much variability in soils, crops and climate. The tillage system used to prepare a field for seeding is based on various factors including the approach's compatibility with the farm's soil types, soil moisture levels, slopes, drainage and climate. The effect on erosion control, timeliness, weed control, insects, diseases and the profitability of the farm operation are also important considerations. The cost of fuel has increasingly become a principal factor in the selection of a tillage approach.

6. Drainage areas, also called watersheds or drainage basins, are areas where all contributing surface waters share the same drainage outlet. Drainage areas channel runoff from precipitation and snow melt into stream flow. The sub-sub-drainage area is the smallest unit in the National Hydrological Network of Canada.

Map 1
Percentage of total area prepared for seeding using no-till, by sub-sub drainage area, 2006



Source(s):
Agriculture and Agri-Food Canada and Statistics Canada, special tabulations, Census of Agriculture, CGC Base, 2006.

Environment and sustainable development indicators

Table 1
Population indicators

	2002	2003	2004	2005	2006	2007
Population (number)[1]	31,372,587	31,676,077	31,995,199	32,312,077	32,649,482	32,976,026
Percentage change	1.1	1.0	1.0	1.0	1.0	1.0
Aged 65 and over (percent of total)	12.7	12.8	13.0	13.1	13.2	13.4
Urban (percent of total)	..	..	..	..	80.2	..
Density (per square kilometre)	3.5	3.5	3.5	3.6	3.6	3.7

1. Population data is based on the Estimates of Population program, except for data on urban population, which is based on the Census of Population.

Source(s):
Statistics Canada, CANSIM table 051-0001, http://cansim2.statcan.ca/cgi-win/cnsmcgi.pgm?Lang=E&RootDir=CII/&CANSIMFILE=CII/CII_1_E.htm (accessed August 14, 2008).
Statistics Canada, 2007, *Population and Dwelling Count Highlight Tables, 2006 Census*, www12.statcan.ca/english/census06/data/popdwell/Tables.cfm (accessed August 14, 2008).

Table 2
Economy indicators

	2002	2003	2004	2005	2006	2007
Gross Domestic Product (million chained 2002 dollars)	1,152,905	1,174,592	1,211,239	1,246,064	1,284,819	1,319,681
Percentage change	2.9	1.9	3.1	2.9	3.1	2.7
Per capita (chained 2002 dollars)	36,749	37,081	37,857	38,563	39,352	40,019
Consumer Price Index (2002 = 100)	100.0	102.8	104.7	107.0	109.1	111.5
Unemployment rate (percent)	7.7	7.6	7.2	6.8	6.3	6.0

Source(s):
Statistics Canada, CANSIM tables 380-0017, 051-0001, 326-0021 and 282-0002, http://cansim2.statcan.ca/cgi-win/cnsmcgi.pgm?Lang=E&RootDir=CII/&CANSIMFILE=CII/CII_1_E.htm (accessed August 14, 2008).

Table 3
Social indicators

	2002	2003	2004	2005	2006	2007
Average household spending (current dollars)						
Water and sewage	185	202	204	211	221	..
Electricity	993	1,026	1,040	1,070	1,111	..
Food	6,553	6,618	6,772	6,978	7,046	..
Gasoline and other motor fuels	1,690	1,665	1,854	2,024	2,079	..
Personal expenditure on consumer goods and services (million chained 2002 dollars)	655,722	675,443	697,566	723,181	754,179	788,224
Residential waste						
Production per capita (kilograms)	358	..	385	..	398	..
Disposal (tonnes)	8,446,766	..	8,961,583	..	9,238,376	..
Disposal per capita (kilograms)	269	..	280	..	283	..
Diversion (tonnes)	2,789,669	..	3,363,803	..	3,744,843	..
Diversion per capita (kilograms)	89	..	105	..	115	..
Diversion rate (percent of waste production)	25	..	27	..	29	..
Distance driven by light vehicles[1] (million kilometres)	290,320	286,803	285,164	289,717	296,871	300,203
Asthma (percent of population age 12 and over)	..	8.4	..	8.3	..	..

1. Distance driven for vehicles weighing less than 4.5 tonnes, excluding the territories.

Source(s):
Statistics Canada, CANSIM tables 203-0003, 203-0002, 203-0007, 380-0017, 153-0041, 153-0042, 051-0001, 405-0063 and 105-0400, http://cansim2.statcan.ca/cgi-win/cnsmcgi.pgm?Lang=E&RootDir=CII/&CANSIMFILE=CII/CII_1_E.htm (accessed August 14, 2008).

Table 4
Energy indicators

	2002	2003	2004	2005	2006	2007
Primary energy availability (terajoules)	11,163,501	11,478,526	11,527,500	11,307,113	11,216,025	..
Primary and secondary energy						
Exports (terajoules)	9,491,341	9,444,883	9,810,695	9,641,137	9,786,984	..
Residential consumption (terajoules)	1,286,677	1,338,166	1,313,015	1,296,644	1,250,283	..
Established reserve, closing stock[1]						
Crude bitumen (million cubic metres)	1,840	1,720	1,660	1,620	3,340	3,500
Crude oil (million cubic metres)	606.1	590.0	603.8	752.3	712.6	..
Natural gas (billion cubic metres)	1,529.6	1,469.5	1,497.5	1,553.7	1,577.7	..
Recoverable reserves, closing stock[1]						
Coal (million tonnes)	4,485.3	4,423.1	4,404.2	4,315.6	4,468.8	4,395.1
Uranium (tonnes)	439,000	429,000	444,000	431,000	423,400	..
Total electricity generation (megawatt hours)	578,728,900	564,218,465	571,326,681	597,248,219	585,097,331	603,815,278
Hydro (percent of total)	59.8	59.0	58.7	60.0	60.0	60.4
Nuclear (percent of total)	12.3	12.5	14.9	14.5	15.8	14.7
Generation from fossil fuel and other fuel combustion (percent of total)	27.9	28.5	26.4	25.5	24.2	24.9
Research and development (R&D) expenditures						
Private sector R&D in alternative energy (million constant 1997 dollars)	196	204	..	..	..	..

1. The size of the reserve at year-end.

Source(s):
Statistics Canada, CANSIM tables 128-0009, 153-0012, 153-0013, 153-0014, 153-0017, 153-0018, 153-0019 and 127-0001, http://cansim2.statcan.ca/cgi-win/cnsmcgi.pgm?Lang=E&RootDir=CII/&CANSIMFILE=CII/CII_1_E.htm (accessed August 14, 2008).
Chiru, Radu, 2006, "Research and Development for New Energy Technologies in the Private Sector," *Analysis in Brief,* Statistics Canada Catalogue no. 11-621-MWE2006050, Ottawa.

Table 5
Environment and natural resources indicators

	2002	2003	2004	2005	2006	2007
Total greenhouse gas (GHG) emissions (megatonnes of carbon dioxide equivalent)	717	741	743	734	721	..
GHG emissions per capita (tonnes)	22.9	23.4	23.2	22.7	22.1	..
GHG emissions by final demand						
Total household[1] (megatonnes of carbon dioxide equivalent)	420	430	418[p]	..	..	..
Total household per capita (tonnes)	13.4	13.6	13.1[p]	..	..	..
Direct household[2] (megatonnes of carbon dioxide equivalent)	110	113	112[p]	..	..	..
Indirect household[3] (megatonnes of carbon dioxide equivalent)	310	317	306[p]	..	..	..
Exports (megatonnes of carbon dioxide equivalent)	268	268	270[p]	..	..	..
Annual temperature departures,[4] Canada (degrees Celsius)	0.6	1.1	0.1	1.7	2.4	0.9
Value of selected natural resources (million current dollars)						
Land	1,013,754	1,095,419	1,227,819	1,358,968	1,506,869	1,675,870
Timber	303,278	297,474	311,771	290,511	275,462	263,459
Subsoil resource stocks	375,276	465,083	566,179	807,913	938,630	1,008,028
Average farm pesticide expenditures (current dollars)	6,228	7,232	7,602	7,792	8,268	..
Air quality[5]						
Ozone (population-weighted, parts per billion)	40	39	35	38	..	..
$PM_{2.5}$ (population-weighted, micrograms per cubic metre)	10	9	9	9	..	..

1. Total household greenhouse gas emissions are the sum of direct plus indirect household greenhouse gas emissions.
2. Direct household greenhouse gas emissions include all greenhouse gas emissions due to energy use in the home and for private motor vehicles.
3. Indirect household greenhouse gas emissions are those business-sector emissions due to the production of the goods and services purchased by households. An estimate of the greenhouse gas emissions from foreign companies due to the production of the imported goods purchased by Canadian households is included.
4. Annual departures from the 1951 to 1980 temperature normals.
5. Ground-level ozone and fine particulate matter ($PM_{2.5}$) are two key components of smog that have been linked to health impacts ranging from minor respiratory problems to hospitalizations and premature death. Exposure studies indicate that adverse health effects can occur even with low concentrations of these pollutants in the air. Annual data are revised, based on the latest release of the *Canadian Environmental Sustainability Indicators* report.

Source(s):
Statistics Canada, CANSIM tables 153-0046, 051-0001, 378-0005, and 002-0044, http://cansim2.statcan.ca/cgi-win/cnsmcgi.pgm?Lang=E&RootDir=CII/&CANSIMFILE=CII/CII_1_E.htm (accessed August 14, 2008).
Environment Canada, 2008, *Canada's 2006 Greenhouse Gas Inventory: A Summary of Trends,* www.ec.gc.ca/pdb/ghg/inventory_report/2006/som-sum_eng.cfm (accessed August 14, 2008).
Environment Canada, 2006, *Climate Trends and Variations Bulletin,* www.msc-smc.ec.gc.ca/ccrm/bulletin/annual06/national_e.cfm (accessed August 14, 2008).
Environment Canada, Statistics Canada and Health Canada, 2007, *Canadian Environmental Sustainability Indicators*, Statistics Canada Catalogue no. 16-251-X, Ottawa.
Statistics Canada, Environment Accounts and Statistics Division, Material and Energy Flow Accounts.

Updates

New releases

Controlling the temperature in Canadian homes

Rising energy costs and environmental concerns are clear incentives for households to adopt energy conservation measures. Turning down the thermostat temperature setting at night and using programmable thermostats are two ways a household's energy consumption may be reduced. Using results from the 2006 Households and the Environment Survey, this technical report examines some of the demographic factors associated with these behaviours.

Released September 25, 2008 (Statistics Canada Catalogue no. 16-001-M)

Fork in the road: Canadian agriculture and food on the move

The question of where our food is grown or processed is coming under increased scrutiny, not just in Canada but in other countries, including our trading partners. Concerns underlying this increased focus include discussions of energy consumption required for food transport, environmental concerns, product safety, food security and food costs. This article, part of the publication *Canadian Agriculture at a Glance*, takes a look at the trade in food and shows how Canadians can find out what foods are being produced in their local area.

Released July 25, 2008 (Statistics Canada Catalogue no. 96-325-X)

Canadian Vehicle Survey: Annual, 2007

The Canadian Vehicle Survey measures the activity of all on-road vehicles registered in Canada, except some vehicles such as buses, motorcycles, construction equipment and road maintenance equipment. Estimates of total vehicle-kilometres are available by province and territory. Estimates of passenger-kilometres are available by province only. Estimates of fuel consumed are available by vehicle type.

Released July 16, 2008 (Statistics Canada Catalogue no. 53-223-X)

Upcoming releases

Survey of Environmental Protection Expenditures, 2006

This publication will consist of data from the 2006 Survey of Environmental Protection Expenditures. Estimates of environmental protection expenditures, by industry and province, made by Canadian businesses in response to environmental regulations, conventions or voluntary agreements, will be presented. The estimates will include capital and operating expenditures made for pollution abatement and control, pollution prevention, environmental assessments and audits, and environmental monitoring activities.

To be released shortly (Statistics Canada Catalogue no. 16F0006)

New developments

Redesigned Survey of Environmental Goods and Services

Carol Gudz, Environment Accounts and Statistics Division

The Survey of Environmental Goods and Services (formerly known as the Environment Industry Survey) is currently undergoing a redesign by Statistics Canada. This survey is conducted to obtain detailed revenue estimates derived from the sale of goods and services related to environmental protection. Environmental goods and services are recognized as being an important contributor to the Canadian economy.

The survey covers sales of environmental goods related to waste water treatment, industrial air pollution control, waste management, remediation, and renewable energy production. Also included are sales of related environmental services in the areas of engineering, consulting and remediation. The data from the survey will be aggregated with information from other sources to produce official estimates of national and provincial/territorial economic activity related to environmental protection.

Mail-out is planned for the spring of 2009 with preliminary data anticipated by the end of 2009 and a report of results made available by the spring of 2010.

CANSIM tables and updates

CANSIM is Statistics Canada's key socio-economic database. Updates have been made to the following CANSIM tables:

CANSIM table 153-0001, Value of established natural gas reserves, annual
CANSIM table 153-0002, Value of established crude oil reserves, annual
CANSIM table 153-0003, Value of recoverable subbituminous coal and lignite reserves, annual
CANSIM table 153-0004, Value of recoverable bituminous coal reserves, annual
CANSIM table 153-0005, Value of established crude bitumen reserves, annual
CANSIM table 153-0006, Value of proven and probable potash reserves, annual
CANSIM table 153-0007, Value of proven and probable gold reserves from gold mines, annual
CANSIM table 153-0008, Value of proven and probable iron reserves, annual
CANSIM table 153-0010, Value of proven and probable reserves of miscellaneous minerals, annual
CANSIM table 153-0011, Value of timber stocks, annual
CANSIM table 153-0012, Established crude bitumen reserves, annual
CANSIM table 153-0013, Established crude oil reserves, annual
CANSIM table 153-0014, Established natural gas reserves, annual
CANSIM table 153-0015, Established reserves of natural gas liquids, annual
CANSIM table 153-0016, Established sulphur reserves, annual
CANSIM table 153-0017, Recoverable reserves of bituminous coal, annual
CANSIM table 153-0018, Recoverable subbituminous coal and lignite reserves, annual
CANSIM table 153-0019, Recoverable uranium reserves, annual
CANSIM table 153-0020, Proven and probable copper reserves, annual
CANSIM table 153-0021, Proven and probable gold reserves from gold mines, annual
CANSIM table 153-0022, Proven and probable iron reserves, annual
CANSIM table 153-0023, Proven and probable lead reserves, annual
CANSIM table 153-0024, Proven and probable molybdenum reserves, annual
CANSIM table 153-0025, Proven and probable nickel reserves, annual
CANSIM table 153-0026, Proven and probable potash reserves, annual
CANSIM table 153-0027, Proven and probable silver reserves, annual
CANSIM table 153-0028, Proven and probable zinc reserves, annual
CANSIM table 153-0029, Timber assets (area), annual
CANSIM table 153-0030, Timber assets (volume), annual
CANSIM table 153-0031, Direct plus indirect energy intensity, by industry, annual
CANSIM table 153-0032, Energy use, by sector, annual
CANSIM table 153-0033, Direct plus indirect greenhouse gas emissions intensity, by industry, annual
CANSIM table 153-0034, Greenhouse gas emissions, by sector, annual
CANSIM table 153-0046, Direct and indirect household energy use and household greenhouse gas emissions, annual