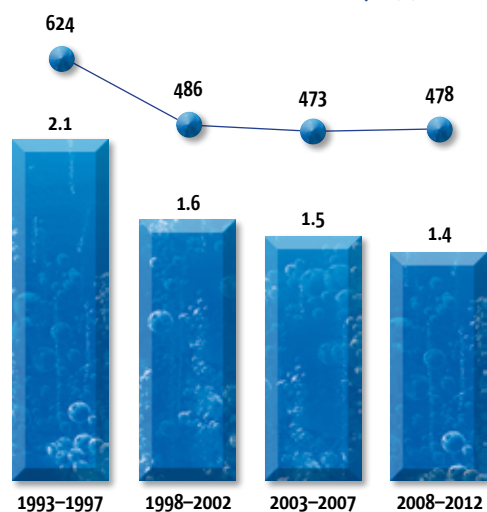


Canadian DROWNING Report

2015 Edition

Prepared for the Lifesaving Society Canada by
the Drowning Prevention Research Centre Canada

Change in Number of Preventable Water-Related Deaths and Death Rates in Canada, 1993–2012



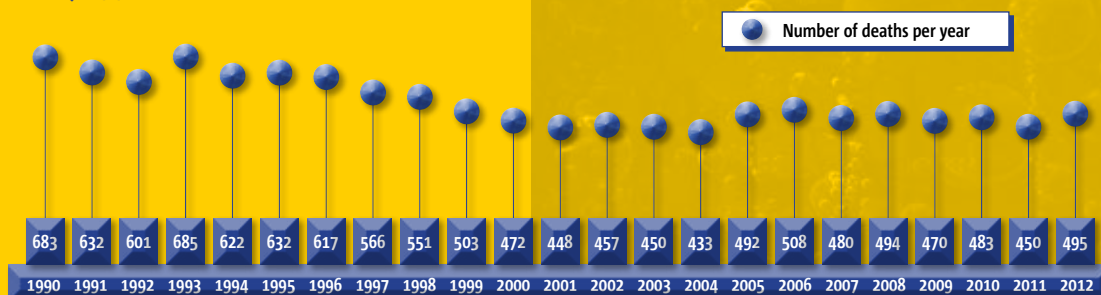
● Average number of deaths per year
■ Average death rate per year, per 100,000 population

The significant long-term progress that has been made in reducing death by drowning in Canada is evident in the latest data. The water-related death rate has fallen steadily over the past 20 years, from an average of 2.1 per 100,000 population each year in the mid-1990s (1993–1997) to a yearly average of 1.4 per 100,000 population in the most recent data (2008–2012).

Despite the encouraging decrease in the death rate, the number of drownings in Canada remains high. There were 495 water-related fatalities in Canada in 2012—the most recent year for which complete data are available from the offices of provincial/territorial Chief Coroners and Chief Medical Examiners. This is the highest number since 2006, reinforcing the need for continued strong drowning prevention efforts. Over the most recent five-year period (2008–2012), there were 2,392 drowning fatalities, an average of 478 each year.

For drownings since 2012, only preliminary interim data from media and Internet reports are available. The table on the following page indicates that at least 359 drownings occurred in 2013 and at least 308 occurred in 2014.

Number of Preventable Water-Related Deaths in Canada, 1990–2012



Number of Preventable Water-Related Deaths in Canada, 2013 and 2014

	2013	2014
Alberta	34	28
British Columbia	74	62
Manitoba	12	15
New Brunswick	11	6
Newfoundland and Labrador	11	14
Northwest Territories	4	1
Nova Scotia	18	12
Nunavut	3	7
Ontario	113	86
Prince Edward Island	3	1
Quebec	57	52
Saskatchewan	17	22
Yukon	2	2
Total	359	308

Note: The numbers in this table are preliminary interim data from media and Internet reports.

WHO DROWNED?

AGE

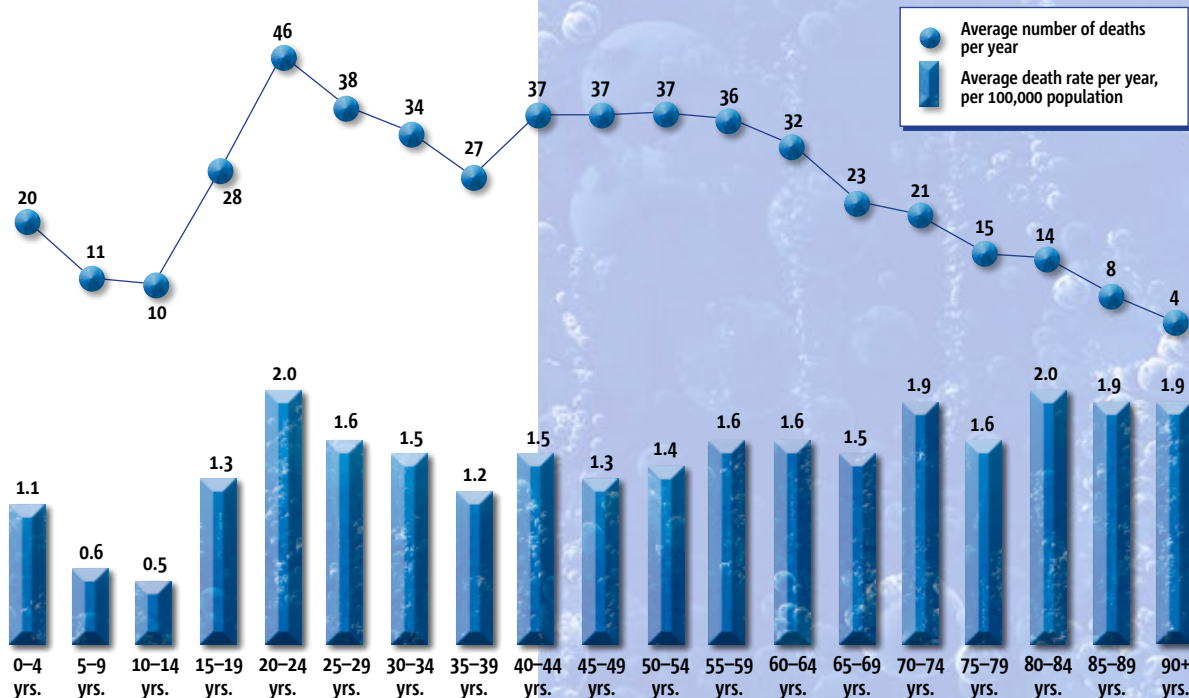
The average age of drowning victims in Canada between 2008 and 2012 was 42.8 years. The highest death rates in 2008–2012 were found among young adults aged 20 to 34 years and seniors 65 and older (both 1.7 per 100,000 population), similar to the previous five-year period (2003–2007). Within these age ranges, the age groups with the highest death rates were 20- to 24-year-olds and 80- to 84-year-olds (both 2.0 per 100,000 population). Moreover, 20- to 24-year-olds had the largest number of drowning deaths (228) of all age groups.

High rates were also found among baby boomers 50 to 64 years of age (1.5 per 100,000) and adults 35 to 49 years of age (1.4 per 100,000). Encouragingly, both of these rates have decreased slightly from the previous five-year period (down from 1.6 and 1.5, respectively).

Drowning prevention education efforts directed at parents with young children appear to be having an impact. There has been a long-term trend toward decreasing death rates among children less than 5 years of age in Canada. This trend continued in 2008–2012 with a death rate of 1.1 for this age group (down 8% from 1.2 in 2003–2007).

Age Group

Number of Preventable Water-Related Deaths and Death Rates in Canada, 2008–2012



GENDER

The vast majority of drowning victims continued to be male. Of the 2,392 people who drowned between 2008 and 2012, 1,968 (82%) were male. The skew toward male victims is evident across all age groups, but is most pronounced among young adults 20 to 34 years of age. In this age group, 9 out of 10 drowning victims were male. Nevertheless, in 2012, 106 or 21% of drowning victims were female. This is the highest proportion of female victims reported in the last 10 years.

ETHNICITY

Previous studies suggested that people who are new to Canada are at a higher risk of drowning. In 2010, the Drowning Prevention Research Centre began collecting data on the country of birth of drowning victims and the length of time they had been living in Canada.

Unfortunately, country of birth could not be determined in over 60% of the cases, and information on the number of years lived in Canada was even more difficult to obtain. From cases where the information was available, 50 drowning victims (since 2010) were reported to have been born in Africa, Asia or Europe. More work is needed to improve the collection of this information.

During 2008–2012, 229 or 10% of drowning victims were reported as being Aboriginal—significantly greater than the approximately 4% of the Canadian population who identify as an Aboriginal person.

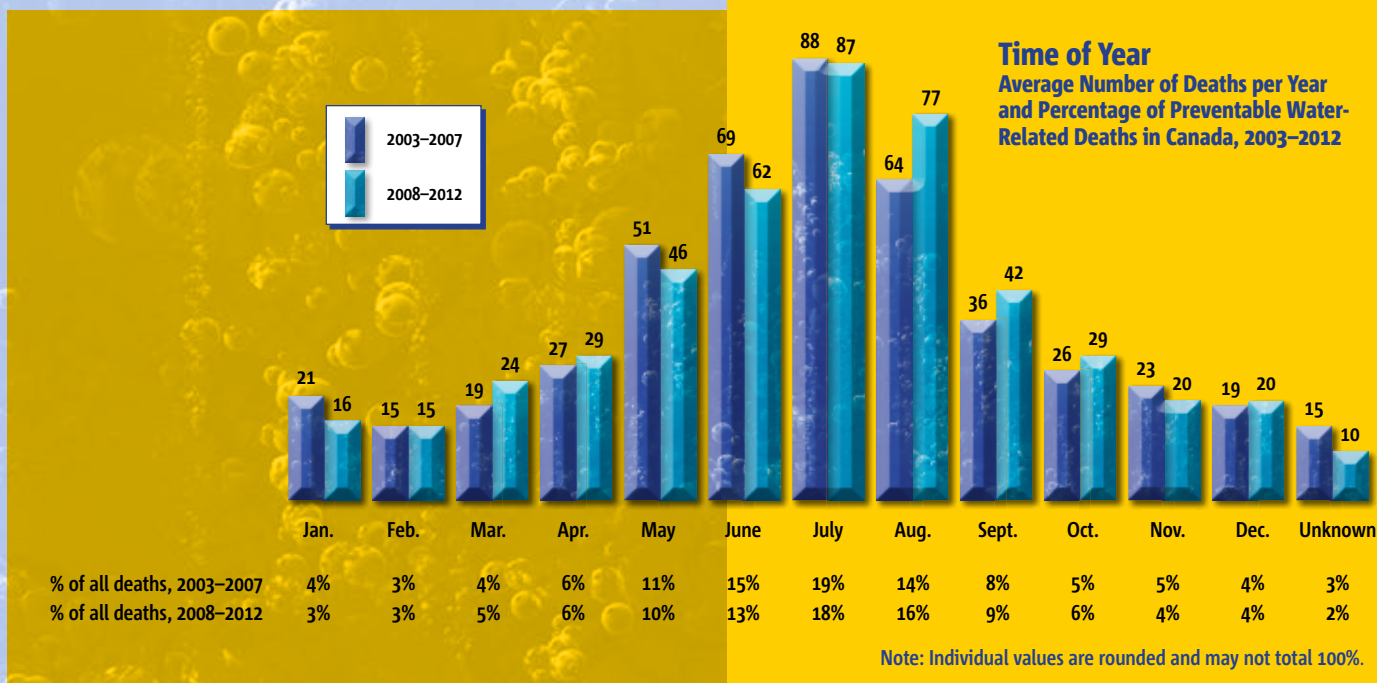
WHEN DID THEY DROWN?

TIME OF YEAR

While water-related fatalities occur year-round in Canada, the largest number occur during the warmer months, especially in the summer. In the 2008 to 2012 period, the majority (66%) of drownings occurred in the May through September period, peaking in July and August (34%). This is consistent with data from the previous five-year period (2003–2007).

DAY OF WEEK

Over half (54%) of 2008–2012 drownings occurred on the weekend (Friday to Sunday). The proportion of weekend drownings was slightly higher in this most recent five-year period than in 2003–2007 (54% versus 50%). In 2008–2012, the frequency and proportion of weekday drownings decreased on all days except Thursday.



WHERE DID THEY DROWN?

BODY OF WATER

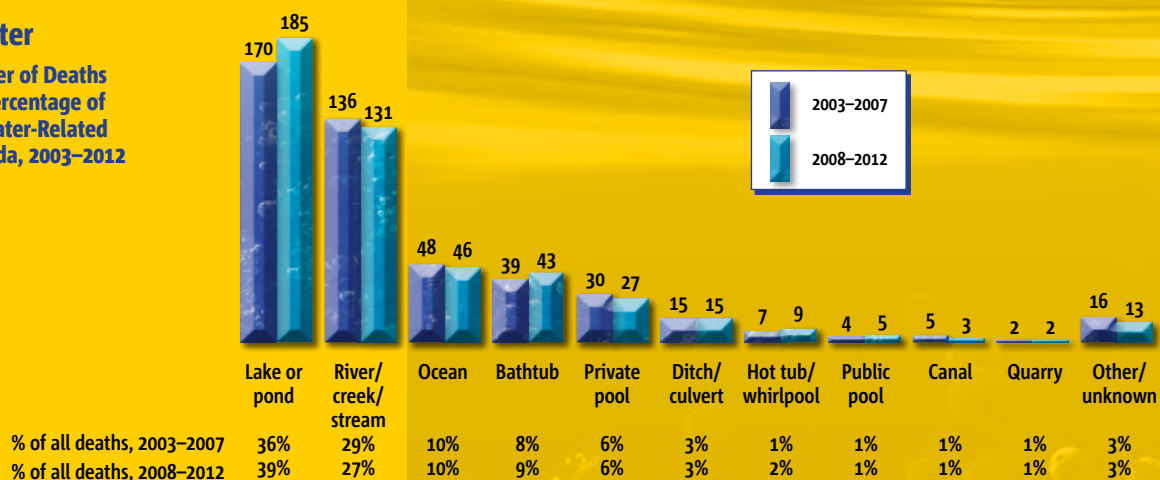
Natural bodies of water such as lakes and ponds (39%); rivers, creeks and streams (27%); and oceans (10%) continued to account for the majority (76%) of Canadian drownings in 2008–2012. In the Maritime provinces, Newfoundland and Labrador, and the territories, this proportion was even greater: 86% to 100% of water-related fatalities occurred in natural bodies of water in these areas.

Drownings in man-made settings continued to be less frequent, but remain a concern especially for young children and older adults. Bathtubs were the no. 1 man-made setting where drownings occurred in Canada (9%). Moreover, bathtub drownings have been on the rise (+10% in 2008–2012 versus the previous five-year period). This increase can be partially attributed to a surge in bathtub drownings in Ontario (+48% over the previous five-year period).

Infants less than 1 year old are especially at risk for drowning in a bathtub: 75% of all drownings in this age group occurred in this setting. Young children and seniors are also vulnerable: 13% of drownings among 1- to 4-year-olds and 16% of drownings among those 65 and older occurred in a bathtub.

Body of Water

Average Number of Deaths per Year and Percentage of Preventable Water-Related Deaths in Canada, 2003–2012



Note: Individual values are rounded and may not total 100%.

Consistent with previous years, pools accounted for 7% of all drownings in Canada in 2008–2012. The majority of pool drownings occurred in private, backyard pools (84%), and this continued to be the no. 1 setting where children under the age of 5 most often drowned (41%).

Drownings in lifeguard supervised settings, such as public pools and waterfronts, continued to be rare—less than 2% of all water-related fatalities in 2008–2012 occurred in lifeguard supervised settings.

PROVINCES AND TERRITORIES

The highest drowning rates continued to be found in Canada's territories. In 2008–2012, the average drowning rate in the three territories was 10.1 per 100,000 population per year. This is seven times higher than the water-related fatality rate for all of Canada. Encouragingly, there has been a reduction in this rate over time. In the most recent five-year period, the drowning rate in Northern Canada decreased by 29% (down from 14.2 per 100,000 in 2003–2007).

In 2008–2012, the average yearly water-related fatality rate was down 51% in the Northwest Territories (from 15.8 to 7.8 per 100,000) and down 25% in Nunavut (from 15.2 to 11.4 per 100,000).

After the territories, the next highest rates were found in Newfoundland and Labrador (4.2 per 100,000), Manitoba (2.3 per 100,000), Saskatchewan (2.1 per 100,000) and British Columbia (1.8 per 100,000).

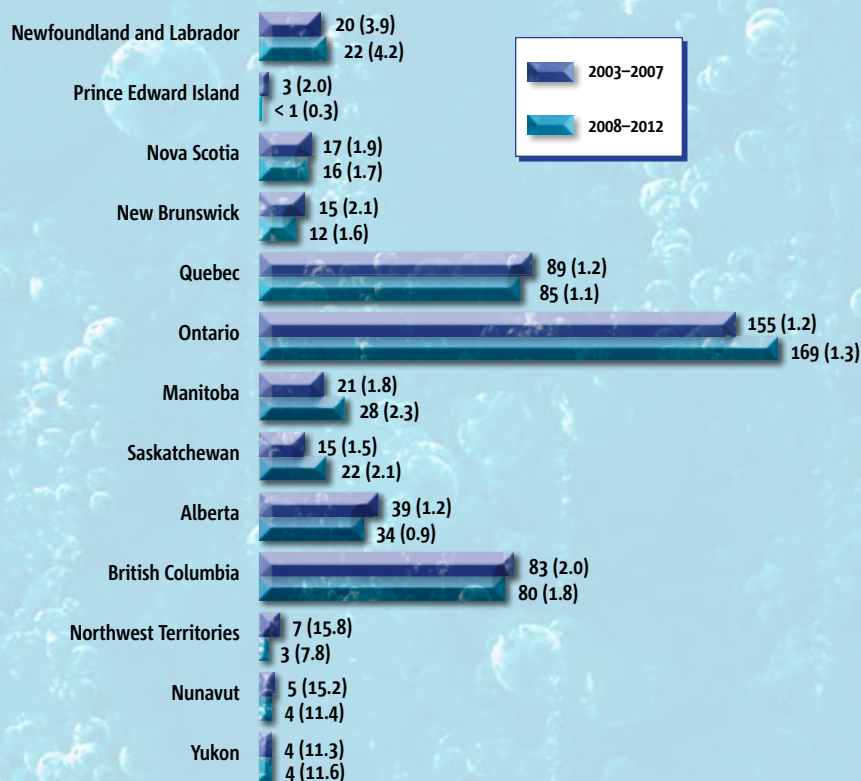
Drowning rates increased most in Saskatchewan (+40% in 2008–2012 compared with 2003–2007) and Manitoba (+28%). The largest decreases in drowning rates were in the territories, Prince Edward Island (–85%), Alberta (–25%) and New Brunswick (–24%).

URBAN VERSUS RURAL LOCATION

A disproportionately high number of people drowned in rural environments compared with the number who actually live there. Less than 20% of the Canadian population lives in a rural area, but just over 40% of all drownings occurred in rural environments. Almost half (48%) of the victims who drowned in a rural location were reported as permanently residing in an urban area. The areas of Canada with the highest proportion of rural drownings were Saskatchewan (81%), Manitoba (74%) and the territories (71%).

Provinces and Territories

Average Number of Preventable Water-Related Deaths and Average Death Rates in Canada, 2003–2012



Note: The number of deaths is the average per year, and the death rate is the average per year, per 100,000 population.

WHAT

WERE THEY DOING?

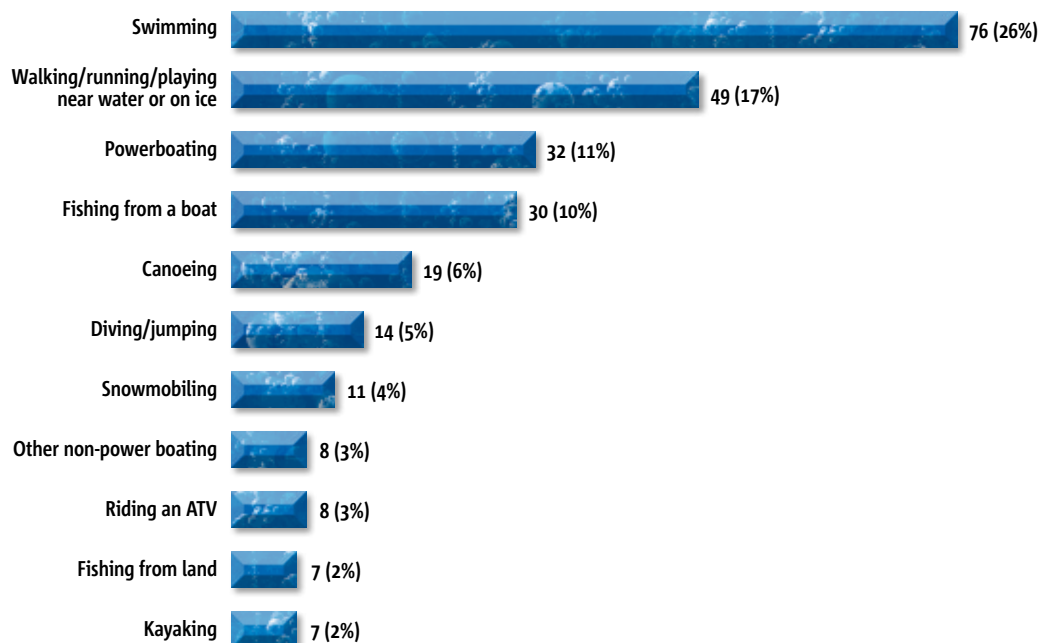
PURPOSE OF ACTIVITY

Recreational activities continued to account for the majority of Canadian drownings (62%). In 2008–2012, 1,477 people drowned while involved in recreational activities in, on or near water, up slightly (+4%) compared with 2003–2007. Of these deaths, 381 occurred while people were “swimming,” which was the most common recreational activity immediately prior to drowning (26%). The next most common activity was “walking, running or playing near water or on ice,” which claimed 245 lives (17%).

Various activities of daily living accounted for the next highest proportion of drowning incidents in Canada (25%). In 2008–2012, 603 people were engaged in a “daily living” activity immediately prior to drowning, up slightly (+3%) compared with 2003–2007. The majority of these victims were either bathing (34%) or involved in a motor vehicle incident (33%).

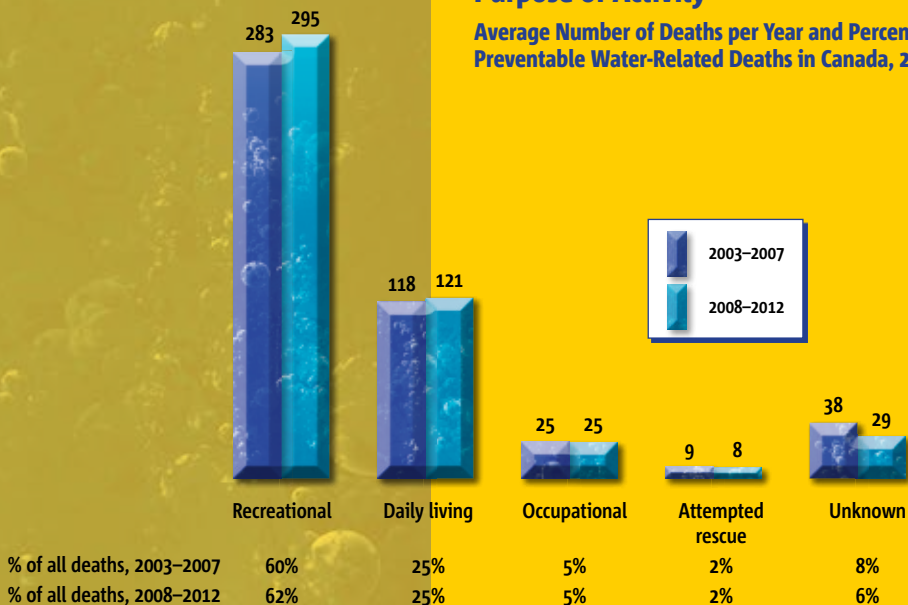
Most Common Primary Recreational Activities

Average Number of Deaths per Year and Percentage of Preventable Water-Related Deaths in Canada, 2008–2012



Purpose of Activity

Average Number of Deaths per Year and Percentage of Preventable Water-Related Deaths in Canada, 2003–2012



Few Canadian drownings occurred during an occupational activity (5%); however, drownings associated with an occupational activity accounted for a large proportion of the water-related fatalities in Newfoundland and Labrador (29%) and Nova Scotia (22%). The most common occupational activity engaged in prior to drowning was commercial fishing (38%).

In 147 cases (6%), the activity immediately prior to drowning was unknown, indicating that there were a number of people who were undertaking aquatic activities alone, or that the activity immediately prior to drowning was not witnessed.

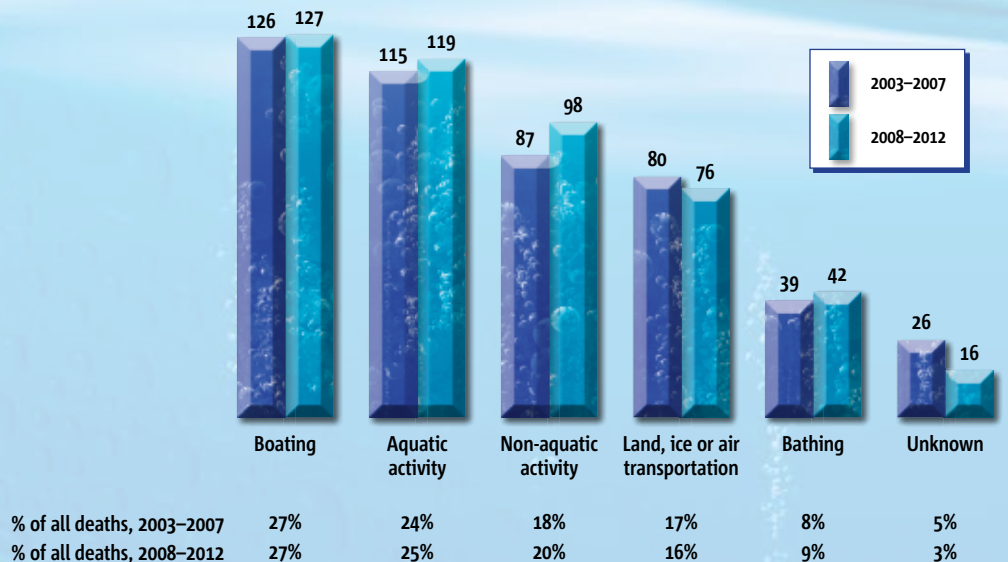
TYPE OF ACTIVITY

Once again, the no. 1 type of activity engaged in prior to a water-related fatality was “boating” (27%, consistent with the 2003–2007 percentage). In 2008–2012, 634 people drowned while boating in Canada—an average of 127 per year. The next most frequent type of activity was “aquatic,” meaning that the victim intended to be in the water at the time of the incident (25%).

Unintentional water entry during a non-aquatic activity accounted for the third greatest proportion of incidents (20%), and this activity type saw the greatest increase (+13% compared with 2003–2007). Bathing deaths made up a smaller proportion of all water-related fatalities (9%).

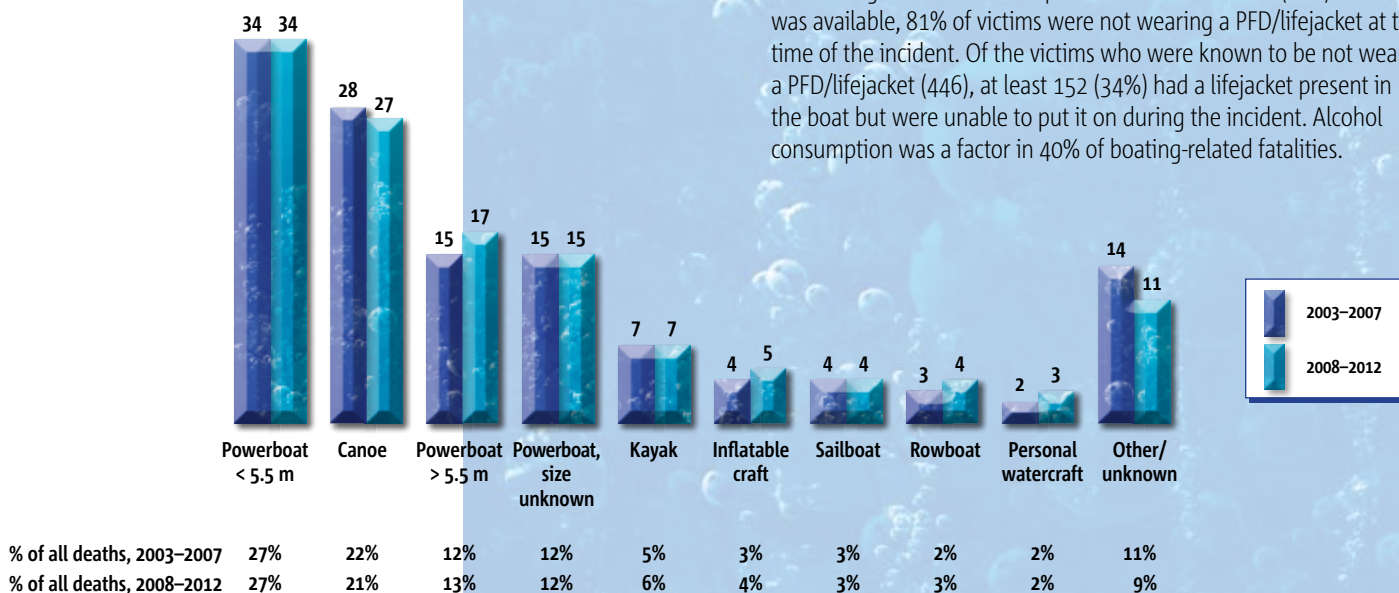
Type of Activity

Average Number of Deaths per Year and Percentage of Preventable Water-Related Deaths in Canada, 2003–2012



Boating Incidents by Type of Vessel

Average Number of Deaths per Year and Percentage of Boating Deaths in Canada, 2003–2012



BOATING INCIDENTS

The number of boating fatalities in 2008–2012 remained consistent with what has been reported in the past. Over half (54%) of boating deaths occurred during powerboat use. Among these, small powerboats less than 5.5 metres in length (27%) were more commonly involved than large powerboats (13%) or personal watercraft (2%). After powerboats, canoes were the next most common type of vessel (21%). The distribution of type of watercraft used was consistent with that of 2003–2007.

For boating deaths for which personal flotation device (PFD) information was available, 81% of victims were not wearing a PFD/lifejacket at the time of the incident. Of the victims who were known to be not wearing a PFD/lifejacket (446), at least 152 (34%) had a lifejacket present in the boat but were unable to put it on during the incident. Alcohol consumption was a factor in 40% of boating-related fatalities.

WHY

DID THEY DROWN? ... RISK FACTORS

The major risk factors contributing to why water-related fatalities occurred in Canada remained consistent with those the Lifesaving Society has identified in the past. Alcohol has been a common factor associated with drowning; in about one in three drowning deaths in Canada, victims had consumed alcohol prior to the incident. The major risk factors associated with the common activities of boating and swimming, as well as with each age group—as identified from the 2008–2012 data—are outlined below.

BOATING

- Not wearing a PFD/lifejacket (81% of boating deaths for which PFD information was available)
- Cold water (53% of boating deaths for which water temperature information was available)
- Alcohol consumption (40%)
- Capsizing (38%)
- Boating alone (27%)
- Falling or being thrown overboard (26%)
- Rough water (20%)

SWIMMING

- Weak or non-swimmer (43% of swimming-related deaths for which swimming ability information was available)
- Alcohol consumption (31%)
- Swimming alone (25%)
- Heart disease/sudden cardiac event while swimming (19%)

AGES 0 TO 4

- Alone near water (58%)
- Supervision absent (49%)
- Supervision present but distracted (43%)
- With other minors only (23%)

AGES 5 TO 14

- With other minors only (35%)

AGES 15 TO 19

- Not wearing a PFD when relevant (90% of deaths for which PFD information was available)
- Alcohol consumption (41%)
- Alone (27%)
- In, on or near water after dark (23%)

AGES 20 TO 34

- Not wearing a PFD when relevant (86% of deaths for which PFD information was available)
- Alcohol consumption (51%)
- Alone (29%)
- In, on or near water after dark (28%)

AGES 35 TO 64

- Not wearing a PFD when relevant (76% of deaths for which PFD information was available)
- Alone (49%)
- Alcohol consumption (42%)

AGES 65+

- Not wearing a PFD when relevant (80% of deaths for which PFD information was available)
- Alone (69%)
- Alcohol consumption (21%)

IN SUMMARY

The latest data demonstrate that the downward trend in the drowning death rate in Canada has continued. However, there are still almost 500 water-related fatalities each year, and 2012 saw the most drownings since 2006.

The highest drowning rates occurred among men, young adults 20 to 34 years of age, and seniors 65 and older.

Drownings were most likely to occur during the summer, on weekends, and in natural bodies of water such as lakes and rivers. Fewer drownings occurred in private backyard pools, but this setting was especially hazardous for children under the age of 5.

The highest number of drownings occurred in the provinces with the most residents, such as British Columbia, Ontario and Quebec. But when population was taken into account, drowning rates were highest in the territories, Newfoundland and Labrador, Manitoba and Saskatchewan.

By purpose of activity, the largest proportion of incidents occurred during a recreational activity. The most common of these were “swimming” and “walking, running or playing near water or on ice.”

Boating was the most common type of activity prior to a water-related fatality. Not wearing a PFD/lifejacket and alcohol consumption were often contributing factors in boating incidents.

Long-term progress in the reduction of the Canadian drowning rate indicates that drowning prevention education may be working, but the increase in the number of drowning deaths in the most recent data collection year, 2012, reinforces the need to continue these efforts.

RESEARCH METHODOLOGY

COMPLETE DATA FROM 1995 TO 2012

The drowning research process involves data collection, research tabulation and analysis. The water-related death data are extracted from the Office of the Chief Coroner or Chief Medical Examiner in each province and territory. The scope of this research includes:

- collection of the data needed to profile victims of aquatic incidents, including the circumstances and contributing factors under which these incidents occurred;
- all deaths in each province/territory and in Canada overall resulting from incidents “in, on or near” water—“near-water” incidents were included if the incident was closely related to water-based recreational, occupational or daily living activity, or if the presence of water appeared to be an attraction contributing to the incident;
- only preventable (unintentional) deaths, not deaths due to natural causes, suicide or homicide.

PRELIMINARY INTERIM DATA

Complete final data on drownings and other water-related deaths that occurred after 2012 are not yet available from the offices of the provincial/territorial Chief Coroners and Chief Medical Examiners. The interim, preliminary data are derived from media releases, media clippings, news reports and Internet searches.

ACKNOWLEDGEMENTS

We gratefully acknowledge the support, co-operation and efforts of:

- The Office of the Chief Coroner or Chief Medical Examiner in each province/territory, which permitted and facilitated confidential access to reports on preventable water-related deaths. This provided the base data for this research and report.
- The volunteers who contributed their time and energy to the research, including data extraction on preventable water-related deaths from coroners’/medical examiners’ files.
- Tessa Clemens, who was the primary author and data analyst for this report, and Lucie Simoes, who provided data input and verification.

LIFESAVING SOCIETY

The Lifesaving Society—Canada’s lifeguarding experts—works to prevent drowning and water-related injury through its training programs, Water Smart® public education, aquatic safety management, drowning research and lifesaving sport. Annually, over one million Canadians participate in the Society’s swimming, lifesaving, lifeguard, first aid and leadership training programs. The Society sets the standard for aquatic safety in Canada and certifies Canada’s national lifeguards.



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Drowning Prevention Research Centre Canada

The Drowning Prevention Research Centre is the lead agency for drowning and water-incident research in Canada. The Centre conducts research into fatal and non-fatal drownings, significant aquatic injury and rescue interventions. Contact Barbara Byers, Research Director, at experts@drowningresearch.ca or 416-490-8844.