

Canadian Drowning Report 2017 Edition

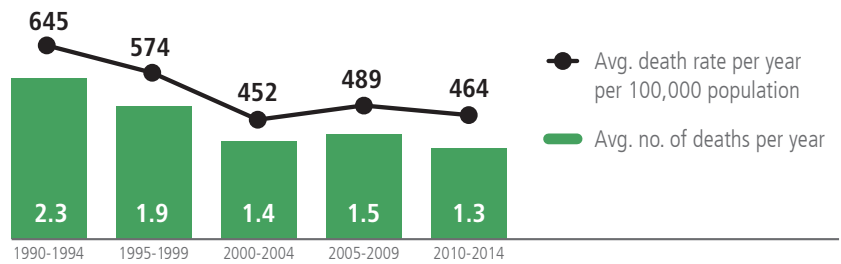
Prepared for the Lifesaving Society Canada by the
Drowning Prevention Research Centre Canada



LIFESAVING SOCIETY
The Lifeguarding Experts

The long-term downward trend of drowning deaths in Canada continues.

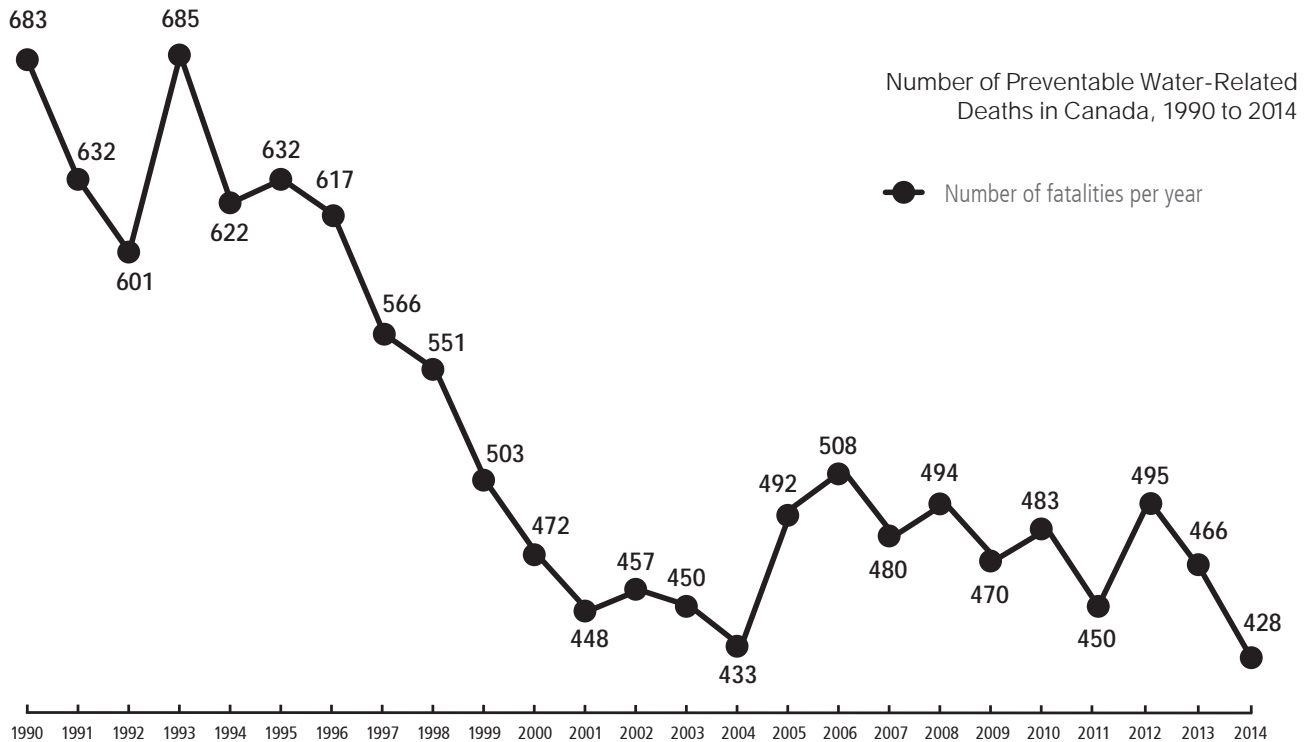
Change in Number of Unintentional Water-Related Deaths and Death Rates in Canada over 25 years, 1990-2014



According to the most recent data from the Chief Coroner's and Medical Examiner's offices in Canada, there were 428 drowning deaths in Canadian waters in 2014, the lowest number of water-related fatalities to be reported in the last 25 years.

This decrease can be partially attributed to fewer drowning deaths reported in the most populous provinces: Ontario, Quebec, and British Columbia. In 2014, data collected from the Office of the Chief Coroner of Ontario indicated that 130 water-related fatalities occurred that year, 30 fewer than any other year in the previous decade. In Quebec, 77 were reported, compared to a yearly average of 83 and in British Columbia, 66 drowning deaths were reported compared to an average of 75 per year.

An average of 464 people drowned in Canada each year in the most current five-year period (2010-2014), down from an average of 489 per year in 2005-2009. The average water-related death rate has decreased over the past 25 years from 2.3 per 100,000 population each year in the early 90's (1990-1994) to 1.3 per 100,000 population in the most recent data (2010-2014). Despite this long-term progress, high numbers of preventable water-related fatalities continue to occur in Canada: a total of 2,322 children, youth and adults lost their lives in Canadian waters between 2010 and 2014.



Number of Canada-wide unintentional water-related deaths, 2015 and 2016

Unintentional Water-Related Fatalities by Province/Territory, 2015 and 2016

For drowning deaths that occurred after 2014, only preliminary interim data from media and internet reports are available. The chart below indicates that at least 311 drowning deaths occurred in 2015 and at least 297 occurred in 2016.

Province/Territory	2015	2016
Alberta	15	14
British Columbia	67	56
Manitoba	8	14
New Brunswick	7	10
Newfoundland and Labrador	18	10
Nova Scotia	18	7
Northwest Territories	2	0
Nunavut	5	1
Ontario	92	117
Prince Edward Island	0	1
Quebec	63	57
Saskatchewan	14	9
Yukon	2	1
Total	311	297

Who is drowning?

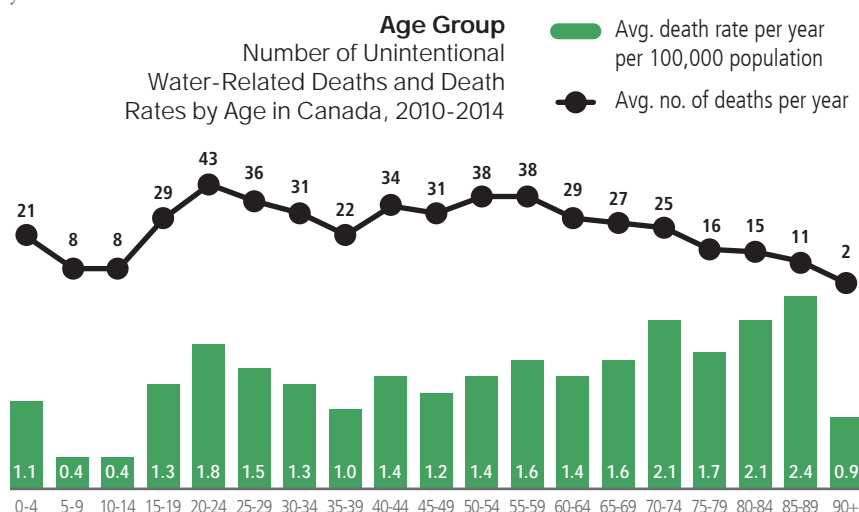
Age

The average age of drowning victims is increasing in line with the aging Canadian population.

In the 2010-2014 period, the average age of drowning victims was 44, compared to 41 in the previous five-year period. Looking at the population-based water-related fatality rates, the age groups with the highest risk of drowning in Canada have remained consistent over the past ten years. The highest water-related

fatality rates in 2010-2014 were once again found among young adults aged 20-34, baby boomers 50-64 years of age, and seniors 65 and older (1.5, 1.5, and 1.9 per 100,000 respectively). Within these age groups, 20-24 year-olds, 55-59 year-olds, and 85-89 year-olds had the highest death rate (1.8, 1.6, and 2.4 per 100,000 population, respectively). Moreover, 20-24 year-olds had the highest number of drowning deaths of all age groups with an average of 43 drowning fatalities each year.

The lowest drowning rates were found among young people. Youth 5-14 years of age had the lowest water-related fatality rate of all ages (0.4 per 100,000). The long-term trend of decreasing death rates among children under 5 continued in 2010-2014 (1.1 per 100,000 down 8% from 1.2 per 100,000 in 2005-2009).



Sex

The majority of drowning deaths in Canada occur among males.

Consistent with previous years, approximately 8 out of 10 drowning victims were male. Of the 464 drowning fatalities that occurred on average each year between 2010 and 2014, 376 victims were male. This translates to a water-related fatality rate of 2.2 per 100,000 population. In comparison, an average of 89 females drowned each year, a rate of 0.5 per 100,000 population.

The proportion of male drowning victims varies by location and age. Although more drowning deaths occur among males in every region of Canada, the skew towards males was even more pronounced in Atlantic Canada. In Newfoundland and Labrador and in the Maritime provinces, 9 out of 10 drowning victims were male. By age, the greatest proportion of male drowning deaths once again occurred among young adults 20-34 years and the lowest proportions among children under 5 and the elderly.

There were fewer drowning fatalities among females in 2014 than in recent years. After a moderate increase in the number and proportion of female drowning fatalities in each year from 2010 to 2013, culminating in over 100 female drowning deaths in 2013 (23%), 84 drowning fatalities occurred among females in 2014, and the proportion of female drowning victims decreased to 20%.

Ethnicity

Drowning risk varies based on ethnicity.

Indigenous peoples continue to be at a higher risk for drowning than non-Indigenous Canadian residents. In the 2010-2014 period, an average of 50 people who drowned each year (12% of all drowning fatalities) were reported to be Indigenous. Comparatively, approximately 4% of the Canadian population identifies as an Indigenous person.

The Drowning Prevention Research Centre Canada continues to explore the risk of drowning for new-comers to Canada. As part of this effort, in 2010 we began collecting data on the country of birth of drowning victims, as well as how long they had been living in Canada prior to drowning. Unfortunately, obtaining this information continues to be difficult; country of birth could not be determined in almost 60% of cases. More work is needed to improve the reporting of information regarding birth place of drowning victims. From cases where the information was available, we know that since 2010, 90 drowning victims have been reported being born outside Canada, in North America, Africa, Asia or Europe.



When are they drowning?

By time of year

Drowning deaths occur throughout the year in Canada, with the largest number in the warmer months (May through September).

In the 2010-2014 period, over two-thirds (67%) of all water-related fatalities occurred in one of these months, an average of 312 drowning deaths each year. The greatest number of incidents occurred in July (19%, an average of 89 deaths each year). The proportion of drowning deaths in the warmer months was slightly higher in 2010-2014 than the previous five-year period (64% in 2005-2009). This increase was caused by more drowning deaths in June (68/year vs 65/year), July (89/year vs 86/year), and September (42/year vs 35/year) and fewer drowning deaths in the colder months with the exception of February.

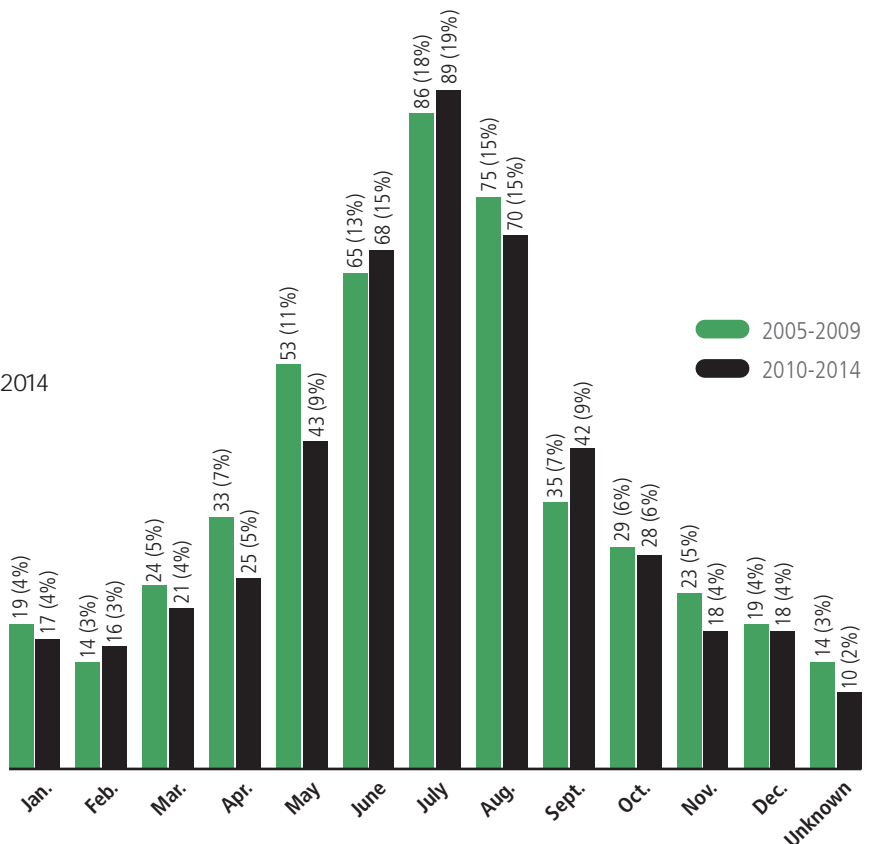
By day of week

Water-related fatalities occur on every day of the week, with the largest number occurring on the weekend.

Consistent with the previous five-year period, over half (54%) of the drowning deaths in 2010-2014 occurred on the weekend (Friday to Sunday), and just under half (46%) during the week (Monday to Thursday). The highest incidence of fatal drowning occurred on Saturday (101/year, 22%) followed by Sunday (90/year, 19%).

Time of Year

Average Number of Deaths per Year and Percentage of Unintentional Water-Related Deaths in Canada, 2005-2014



Where are they drowning?

Body of water

Drowning deaths occur in almost every type of body of water in Canada, with the largest number occurring in natural bodies of water.

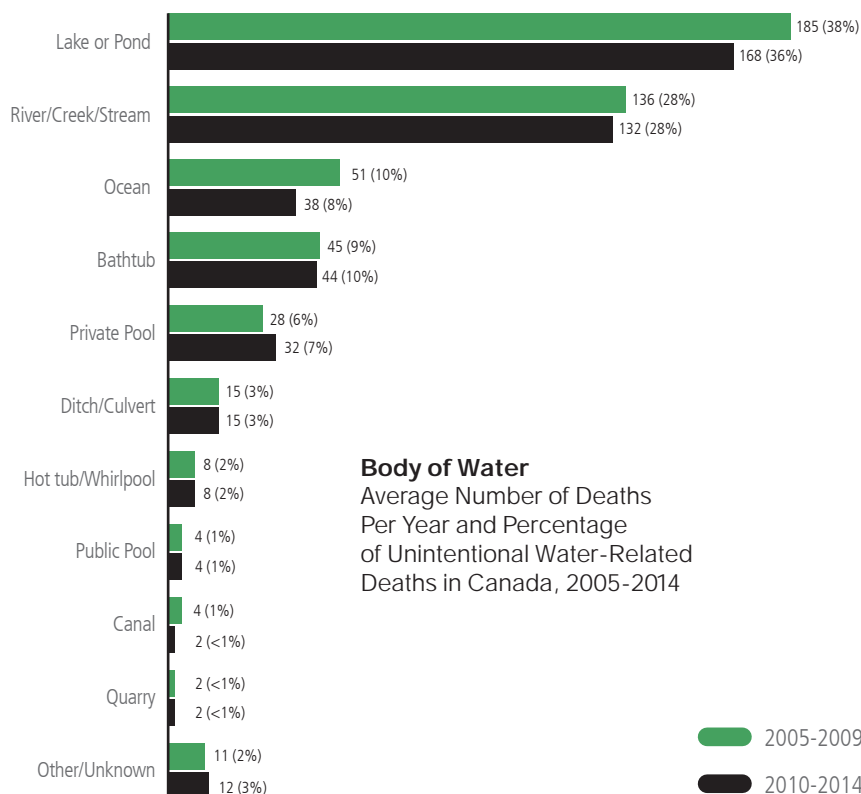
Consistent with previous years, the majority (73%) of water-related fatalities in 2010-2014 occurred in natural bodies of water such as lakes and ponds (36%), rivers and streams (28%), and oceans (8%). The Atlantic provinces and the Territories continue to have even higher proportions of drowning fatalities in natural bodies of water than other provinces (ranging from 89% to 100%). On average, 338 people drown in a natural body of water in Canada each year.

Drowning fatalities in man-made settings are less common, but still accounted for an average of 163 water-related fatalities each year in 2010-2014. Consistent with previous years, bathtubs were the number one man-made setting where drowning deaths occurred (10%). The highest incidence of bathtub drowning death once again occurred in Ontario (113), followed by Quebec (38), Alberta (28), and British Columbia (25); contributing to 14%, 9%, 14%, and 7% of each of these province's total drowning deaths respectively.

An average of 36 drowning deaths per year occurred in a pool in 2010-2014, accounting for 8% of all unintentional drowning deaths. Consistent with previous years, the majority of pool drowning fatalities occurred in private pools (89%). The highest incidence of private pool fatality occurred in Ontario (90) followed by Quebec (39), and British Columbia (14); contributing to 11%, 9%, and 4% of each of these province's total drowning deaths respectively. It is difficult to obtain detailed fence and gate information from backyard pool drowning cases. In instances where this information was available, 40% of the pools had no fence present or a non-compliant fence, and 77% had either no gate, or the gate was neither self-closing nor self-latching.

Few drowning deaths occur in lifeguard supervised settings such as public pools and waterfronts. In 2010-2014 approximately 1% of all water-related fatalities occurred in a setting supervised by lifeguards.

The body of water where people most commonly drown differs by age group. Young and middle-aged adults most commonly drown in natural bodies of water such as lakes and rivers. Infants under 1 year and seniors over 65 years of age are vulnerable groups for bathtub drowning deaths. In 2010-2014, 100% of infant drowning deaths occurred in a bathtub. Seniors 65 years and older accounted for 40% of all bathtub drownings. Private backyard pools continue to be the primary setting where children 1-4 years of age most often drown (39%).



Provinces and Territories

Drowning occurs in all regions of Canada with the Territories, Newfoundland and Labrador, and Saskatchewan having the highest drowning rates by population.

The average water-related fatality rates in Nunavut (13.2 per 100,000), the Yukon (10.0 per 100,000), and the Northwest Territories (7.8 per 100,000), continue to be substantially higher than anywhere else in Canada in 2010-2014. After the

Territories, the next highest drowning rates were found in Newfoundland and Labrador (3.5 per 100,000), followed by Saskatchewan (2.4 per 100,000).

Compared with the previous five-year period, the water-related fatality rate decreased in most provinces and territories in 2010-2014, consistent with the overall decrease in the national drowning rate. The largest decreases occurred in the Territories and the Atlantic provinces. In the 2010-2014 period, the drowning rate in the Northwest Territories decreased by 44% from 13.9 per 100,000 population in 2005-2009 to 7.8 per 100,000 population in 2010-2014. Smaller decreases were observed in the Yukon (-14% from 11.6 to 10.0), and Nunavut (-13% from 15.3 to 13.2 per 100,000). In both Newfoundland

and Labrador and in Nova Scotia, the drowning rate decreased by 24% (from 4.6 per 100,000 to 3.5 per 100,000 in Newfoundland and Labrador and from 2.0 per 100,000 to 1.5 per 100,000 in Nova Scotia), and in New Brunswick a 14% decrease was reported (from 1.7 per 100,000 to 1.4 per 100,000).

Provinces that experienced a more moderate decrease in water-related fatality rate were British Columbia (-12%), Ontario (-11%), Alberta (-9%), and Quebec (-5%). Saskatchewan was the only province to report an increase in water-related fatality rate in the 2010-2014 period (+35% from 1.7 per 100,000 in 2005-2009 to 2.4 per 100,000 in 2010-2014).

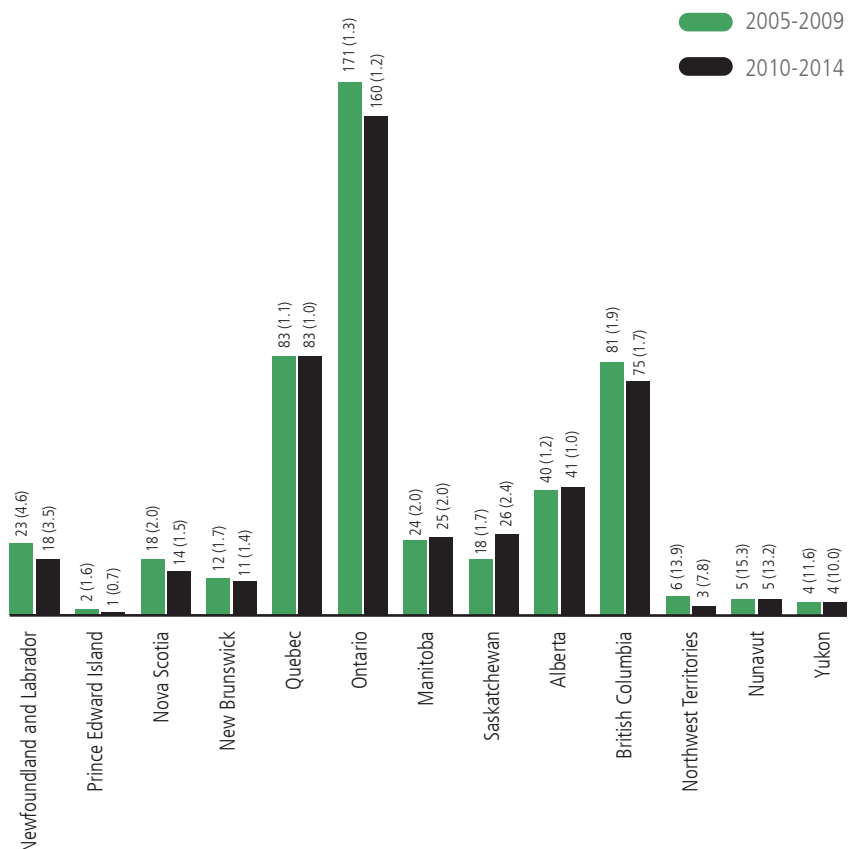
Urban vs. Rural Location

A disproportionately high number of people drown in rural environments compared with the number who actually live there.

Less than 20% of the Canadian population lives in a rural area, yet 39% of all drowning fatalities in 2010-2014 occurred in a rural environment. Consistent with previous years, the areas of Canada with the highest proportion of rural drownings were Saskatchewan (80%), Manitoba (68%), and the Territories (71%). For comparison, the proportion of the population that lives in a rural area in Saskatchewan is approximately 33%, in Manitoba approximately 28%, and in the Territories an average of approximately 46%.

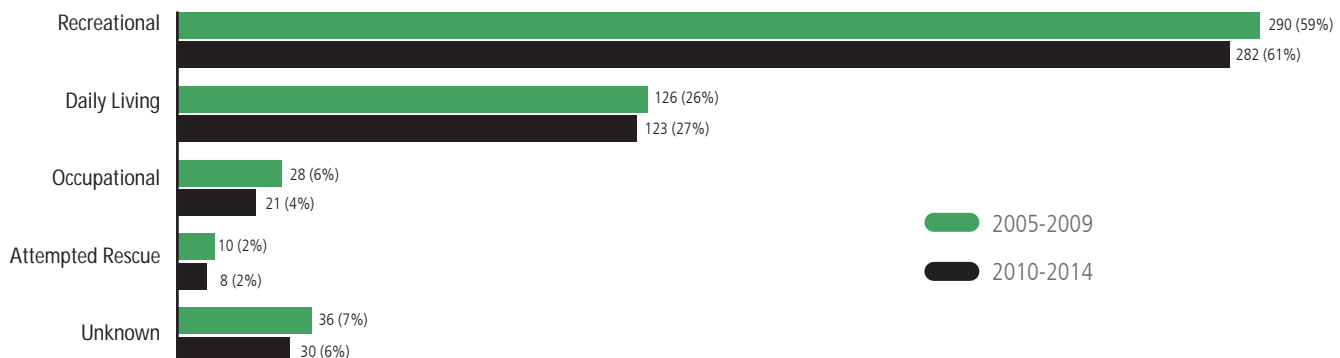
Of the 913 drowning fatalities that occurred in rural areas of Canada between 2010 and 2014, 396 (43%) were reported as permanently residing in an urban area.

Province and Territory
Average Number of Unintentional Water-Related Deaths per Year and Death Rates in Canada, 2005-2014



What were they doing?

Purpose of Activity
Average Number of Deaths per Year and Percentage of Unintentional Water-Related Deaths in Canada, 2005-2014



Purpose of activity

The majority of drowning deaths in Canada occur during recreational activities.

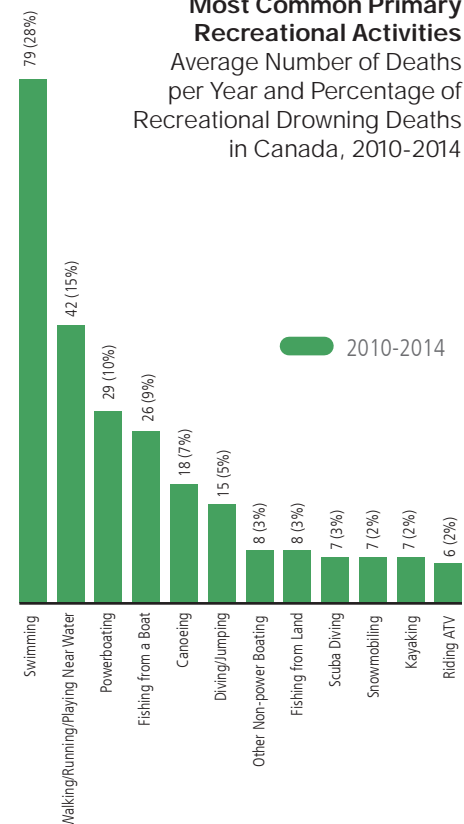
Between 2010 and 2014, an average of 282 drowning deaths occurred each year while the person was recreating in, on, or near the water, accounting for 61% of all unintentional water-related fatalities. Consistent with previous years, the most common recreational activities were swimming (28%), and walking, running, or playing near water or on ice (15%). An average of 121 people drowned each year while engaged in one of these two activities. Powerboating (10%) and fishing from a boat (9%) were also common recreational activities engaged in by drowning victims. An average of 55 people each year lost their lives during one of these two activities.

Daily living activities (27%) continue to account for the second highest number of drowning incidents in Canada. Between 2010 and 2014, an average of 123 people drowned in Canada each year while engaged in routine daily activities. The most common daily living activities engaged in prior to drowning were bathing (35%) and motor vehicle travel (31%). An average of 81 people drowned each year while engaged in one of these two routine activities.

Together, recreational and daily living activities accounted for most (87%) unintentional water-related fatalities. Fewer drowning incidents involving occupational activities (4%) occurred, and the number and proportion of occupational drowning deaths decreased slightly from the previous five-year period from an average of 28 per year (6%) in 2005-2009 to an average of 21 per year (4%) in 2010-2014. A higher proportion of occupation-related drowning deaths occurred in the Atlantic provinces: 20% in Nova Scotia, 18% in Newfoundland and Labrador, and 17% in New Brunswick. Consistent with previous years, the most vulnerable sector for occupational drowning deaths was commercial fishing (45%), and despite the overall decrease in the number of occupational drowning deaths, the number of commercial fishing drowning fatalities increased slightly (+7%) over the previous five-year period.

In an average of 30 fatal drowning cases per year (6%), the activity immediately prior to drowning was unknown, indicating that there continue to be a number of people who are undertaking aquatic activities alone, or that the activity immediately prior to the drowning was not witnessed.

Most Common Primary Recreational Activities
Average Number of Deaths per Year and Percentage of Recreational Drowning Deaths in Canada, 2010-2014



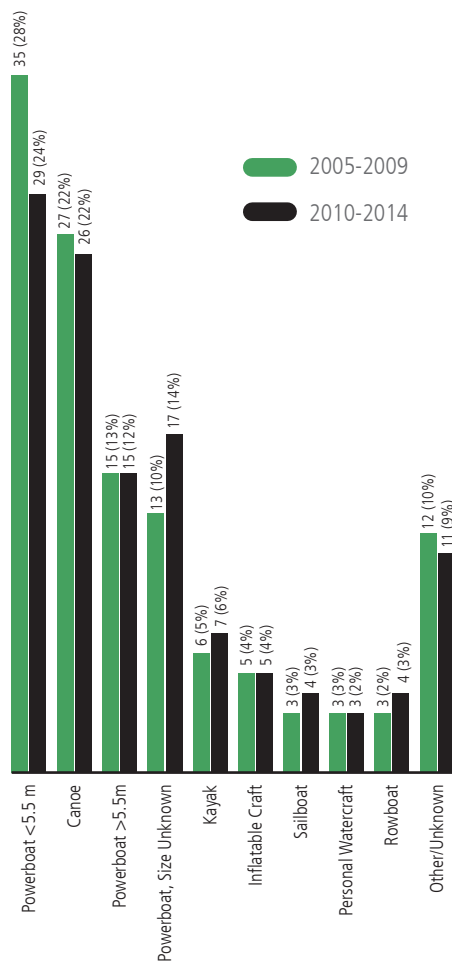
Type of activity

Water-related fatalities most commonly occur during aquatic activities and boating.

An average of 123 people each year (26%) drowned while engaged in an aquatic activity (where they intended to be in the water but something went wrong), and an average of 119 people each year (26%) drowned while engaging in powered or non-powered boating.

Boating Incidents by Type of Vessel

Average Number of Deaths per Year and Percentage of Boating Deaths in Canada, 2005-2014



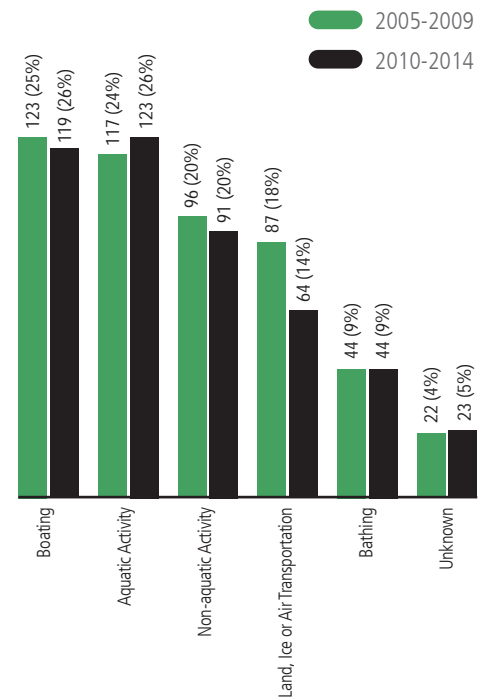
After boating and aquatic activities, unintended water entry (such as an unexpected fall into water) during a non-aquatic activity accounted for the next greatest proportion of incidents (20%). An average of 91 people drowned each year as the result of unintentional water entry.

Land, ice and air transportation (14%) accounted for an average of 64 drowning fatalities each year, representing the most substantial decrease by type of activity from the previous five-year period. In 2005-2009, an average of 87 people drowned during one of these types of transportation each year (18%).

Consistent with the previous five-year period, bathing accounted for 9% of all water-related fatalities in 2010-2014. An average of 44 people drowned each year while bathing.

Type of Activity

Average Number of Deaths per Year and Percentage of Unintentional Water-Related Deaths in Canada, 2005-2014



Boating

Boating-related drowning fatalities often involve powerboats. Common risk factors are alcohol consumption and not wearing a personal flotation device.

The characteristics of boating-related drowning deaths in Canada remain consistent with those reported in the past. Over half (53%) of boating deaths once again occurred during powerboat use. Among these, small powerboats less than 5.5 meters in length (24%) were more commonly involved in drowning fatalities than large powerboats (12%) or personal watercraft (2%). An average of 64 drowning deaths occurred each year during powerboat use. After powerboats, canoes (22%) were the next most common type of vessel involved in boating incidents. An average of 26 people drowned each year while canoeing.

In boating-related deaths for which personal flotation device (PFD) information was available, 82% of the people who drowned were not wearing a PFD/lifejacket at the time of the incident and an additional 4% were not wearing it properly. Of those who were known not to be wearing a PFD/lifejacket, at least 34% had a lifejacket present in the boat but were unable to put it on during the incident. Alcohol consumption was a factor in 39% of boating-related fatalities. The most common types of boating incidents that led to drowning were capsizing (38%) and falling or being thrown overboard (28%).

Why did they drown? ...risk factors

The major risk factors contributing to 'why' water-related fatalities occur in Canada remain consistent with those identified in previous years.

Alcohol is a common factor associated with drowning. On average, in one third of drowning deaths in Canada, the victim had consumed alcohol prior to the incident. Not wearing a personal flotation device or lifejacket while boating is also a common occurrence. Only 1 in 10 victims of boating-related fatalities were known to be wearing a PFD at the time of the incident. Both alcohol consumption and lack of PFD use are particularly common risk factors among teenagers (15-19) and young adults (20-34).

The major risk factors identified in the 2010-2014 data are summarized below. The factors are organized by most common activities (swimming and boating), as well as by age group.

Boating

- Not wearing a PFD/lifejacket (82% of boating deaths for which PFD information was available)
- Cold water (59% of boating deaths for which water temperature information was available)
- Alcohol consumption (39%)
- Capsizing (38%)
- Boating alone (29%)
- Falling or being thrown overboard (28%)
- Boating in darkness or twilight (24%)
- Rough water (21%)

Swimming

- Weak or non-swimmer (45% of swimming-related deaths for which swimming ability information was available)
- Alcohol consumption (34%)
- Swimming alone (28%)
- Heart disease/sudden cardiac event while swimming (20%)

Ages 0-4

- Alone near water (61%)
- Supervision absent (58%)
- Supervision present but distracted (36%)
- With other minors only (22%)

Ages 5-14

- Not wearing a PFD when relevant (56%)
- Alone or with other minors only (50%)

Ages 15-19

- Not wearing a PFD when relevant (96% of deaths for which PFD information was available)
- Alcohol consumption (41%)
- Alone (26%)
- In, on or near the water after dark (21%)

Ages 20-34

- Not wearing a PFD when relevant (85% of deaths for which PFD information was available)
- Alcohol consumption (51%)
- Alone (31%)
- In, on or near the water after dark (24%)

Ages 35-64

- Not wearing a PFD when relevant (77% of deaths for which PFD information was available)
- Alone (51%)
- Alcohol consumption (44%)

Ages 65+

- Not wearing a PFD when relevant (78% of deaths for which PFD information was available)
- Alone (72%)
- Alcohol consumption (21%)



In Summary

The latest data indicates that the long-term trend of decreasing drowning death rates in Canada continues. In 2014, the number of unintentional water-related fatalities reported by the provincial and territorial Coroner's and Medical Examiner's offices was 428, the lowest in the last 25 years.

The highest drowning rates were found among men, young adults 20-34 years of age and seniors 65 and older.

Drowning fatalities were most likely to occur during the summer, on weekends, and in natural bodies of water such as lakes and rivers. Fewer drowning deaths occurred in man-made settings, but among these, bathtubs and private pools were most common.

Despite decreases from the previous five-year period, the highest drowning rates in 2010-2014 were still found in the Territories. Saskatchewan was the only province where water-related fatality rates increased.

Almost two-thirds of all fatal unintentional drowning occurred during a recreational activity, and another quarter during daily living activities. By type of activity, boating and aquatic activities such as swimming and wading were the most common.

The long-term progress that has been made in reducing death by drowning in Canada is encouraging, but there are still an average of 464 preventable, unintentional water-related fatalities occurring each year. This reinforces the need for continued drowning prevention efforts.

Canadian Drowning Report

Research methodology

Complete data from 1990-2014

The drowning research process involves data collection; research tabulation and analysis. The water-related death data is extracted from the offices of the Chief Coroners and Medical Examiners in each province/territory. The scope of this research:

- collects the data needed to profile victims of aquatic incidents, including the circumstances and contributing factors under which these incidents occurred.
- includes all deaths in each province/territory and 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, vocational or daily living activity, or if the presence of water appeared to be an attraction contributing to the incident.
- includes only unintentional deaths. It does not include deaths due to natural causes, suicide, or homicide.

Interim data

Complete final data on more recent drownings and other water-related deaths are not yet available from the offices of the provincial/territorial Chief Coroners and 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 Chief Coroner's Office and the Chief Medical Examiners in each province/territory, who permitted and facilitated confidential access to coroners' reports on unintentional water-related deaths. This provided the base data for this research and report.
- The volunteers who contributed their time and energy including data extraction on unintentional water-related deaths from coroners' files.
- Tessa Clemens who was primary author and data analyst for this report and Lucie Simoes who provided data input and verification.

Drowning Prevention Research Centre Canada

The Drowning Prevention Research Centre is the lead agency for drowning and water-related research in Canada. The Centre conducts research into fatal and non-fatal drowning, significant aquatic injury and rescue interventions.

Contact Barbara Byers, Research Director,
Email: experts@drowningresearch.ca,
Telephone: 416-490-8844.



Contact us

National Office

Tel: 613-746-5694
Email: experts@lifesaving.ca
www.lifesaving.ca

British Columbia & Yukon

Tel: 604-299-5450
Email: info@lifesaving.bc.ca
www.lifesaving.bc.ca

Alberta and Northwest Territories

Tel: 780-415-1755
Email: experts@lifesaving.org
www.lifesaving.org

Saskatchewan

Tel: 306-780-9255
Email: lifesaving@sasktel.net
www.lifesavingsociety.sk.ca

Manitoba

Tel: 204-956-2124
Email: aquatics@lifesaving.mb.ca
www.lifesaving.mb.ca

Ontario

Tel: 416-490-8844
Email: experts@lifeguarding.com
www.lifesavingsociety.com

Quebec

Tel: 514-252-3100
Email: alerte@sauvetage.qc.ca
www.sauvetage.qc.ca

New Brunswick

Tel: 506-455-5762
Email: info@lifesavingnb.ca
www.lifesavingnb.ca

Nova Scotia

Tel: 902-425-5450
Email: experts@lifesavingsociety.ns.ca
www.lifesavingsociety.ns.ca

Prince Edward Island

Tel: 902-368-7757
Email: info@lifesavingsocietypei.ca
www.lifesavingsocietypei.ca

Newfoundland and Labrador

Tel: 709-576-1953
Email: info@lifesavingnl.ca
www.lifesavingnl.ca

The Lifesaving Society

The Lifesaving Society – Canada's lifeguarding experts – works to prevent drowning and reduce water-related injury through its training programs, Water Smart® public education, aquatic safety management, drowning research and lifesaving sport. Annually, over 1,000,000 Canadians participate in the Society's swimming, lifesaving, lifeguard and leadership training programs. The Society sets the standard for aquatic safety in Canada and certifies Canada's National Lifeguards.



Share Globally, Prevent Locally

The Lifesaving Society Canada hosts the International Lifesaving Federation's World Conference on Drowning Prevention in Vancouver, October 17-19. Visit www.wcdp2017.org.



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