



LIFESAVING SOCIETY

The Lifeguarding Experts



Canadian Drowning Report

2012 Edition

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



The Profile of Drownings Is Shifting

The profile of drownings in Canada is shifting, contributing to an upswing in the past five years. Until 2004, there was a long-term decline in drownings. But after reaching an all-time low in 2004, there was a resurgence through 2009 (see chart on page 2). Over the five years, this is an average increase of 8% versus the previous five-year average (2000 to 2004).

It is unclear whether the 2009 moderation in the number of drownings will translate into a return to fewer drownings longer term. Complete final data on fatal drownings and water-related deaths are not yet available for 2010 and 2011. However, interim data based on media and Internet reports indicate an upward surge in 2010. Reported drownings were up 10% compared with 2009 interim deaths, but down 6% in the 2011 interim numbers compared with 2009.

This reflects—at least in part—Canadian weather trends, particularly in the summer when participation in recreation in, on or near water is at its highest. Summer 2009 was cooler than the previous few summers, according to Environment Canada. Summers 2010 and 2011 were the third and fourth warmest on record since Environment Canada began tracking temperatures in 1948.

Taking population into account, the national water-related death rate was also up slightly to 1.5 per 100,000

population during 2005 to 2009 versus the previous five years. (See chart on page 2.) Longer term, the drowning death rate was down significantly from the 2.3 deaths per 100,000 recorded 15 years earlier (1990 to 1994). There has been significant long-term progress in reducing deaths by drowning in Canada, but the more recent upswing reinforces the need for continued strong drowning prevention efforts.

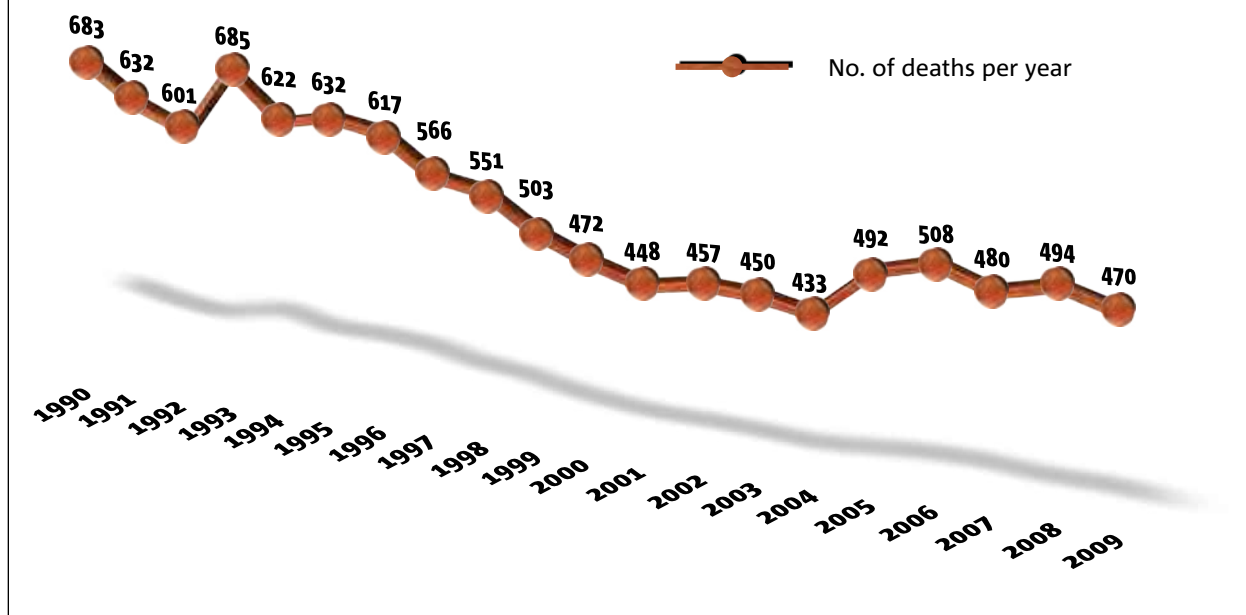
There may be implications for drowning prevention efforts resulting from some long-term changes in the mix of “who is drowning,” “when” and “what they were doing”:

- The aging population is leading to an older profile of “who” is drowning. There are more drownings among baby boomers 50 to 64 years of age (+25%), in line with population growth in that age group.
- “When” drownings are happening is shifting. More deaths are now occurring at night (+39%), on week-days (+17%) and during winter/spring months (+18%) than were seen in the previous 15 years of tracking.
- More drownings are occurring during near-water, non-aquatic activities (+20%) such as walking near water or on ice and falling in (+29%); bathing (+33%); and transportation incidents (+33%) including snowmobiling (+56%). These increases are partially offset by fewer boating fatalities (–12%).

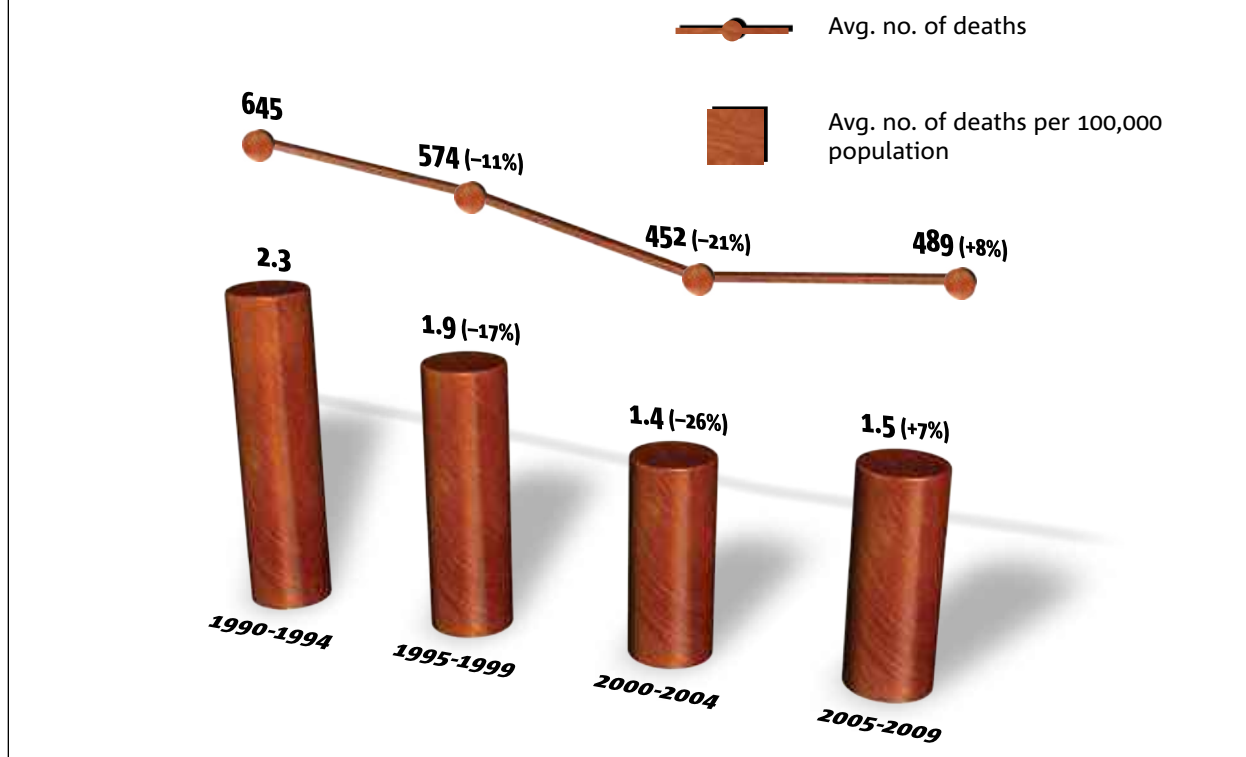
Number of Canada-Wide Preventable Water-Related Deaths, 2009 to 2011 Preliminary Interim Data From Media and Internet Reports

	2009	2010	2011
Alberta	22	23	31
British Columbia	62	66	54
Manitoba	15	17	20
New Brunswick	12	12	9
Newfoundland and Labrador	38	23	12
Northwest Territories	2	2	0
Nova Scotia	13	19	9
Nunavut	3	2	6
Ontario	121	132	97
Prince Edward Island	1	5	3
Quebec	68	79	83
Saskatchewan	9	26	21
Yukon	2	3	2
Total	368	409	347

Number of Preventable Water-Related Deaths in Canada, 1990 to 2009



Change in Number of Preventable Water-Related Deaths and Death Rates in Canada, 1990 to 2009



Other notable changes during 2005 to 2009 include:

- more drownings among 18- to 24-year-olds and 25- to 34-year-olds (+17% and +29%, respectively, in 2005 to 2009 versus 2000 to 2004)—young men being a long-standing high-risk group;
- regional upswings in Ontario (+20% in 2005 to 2009 versus 2000 to 2004) and Alberta (+25%), partially offset by a decrease in British Columbia (−14%).

Who Is Drowning?

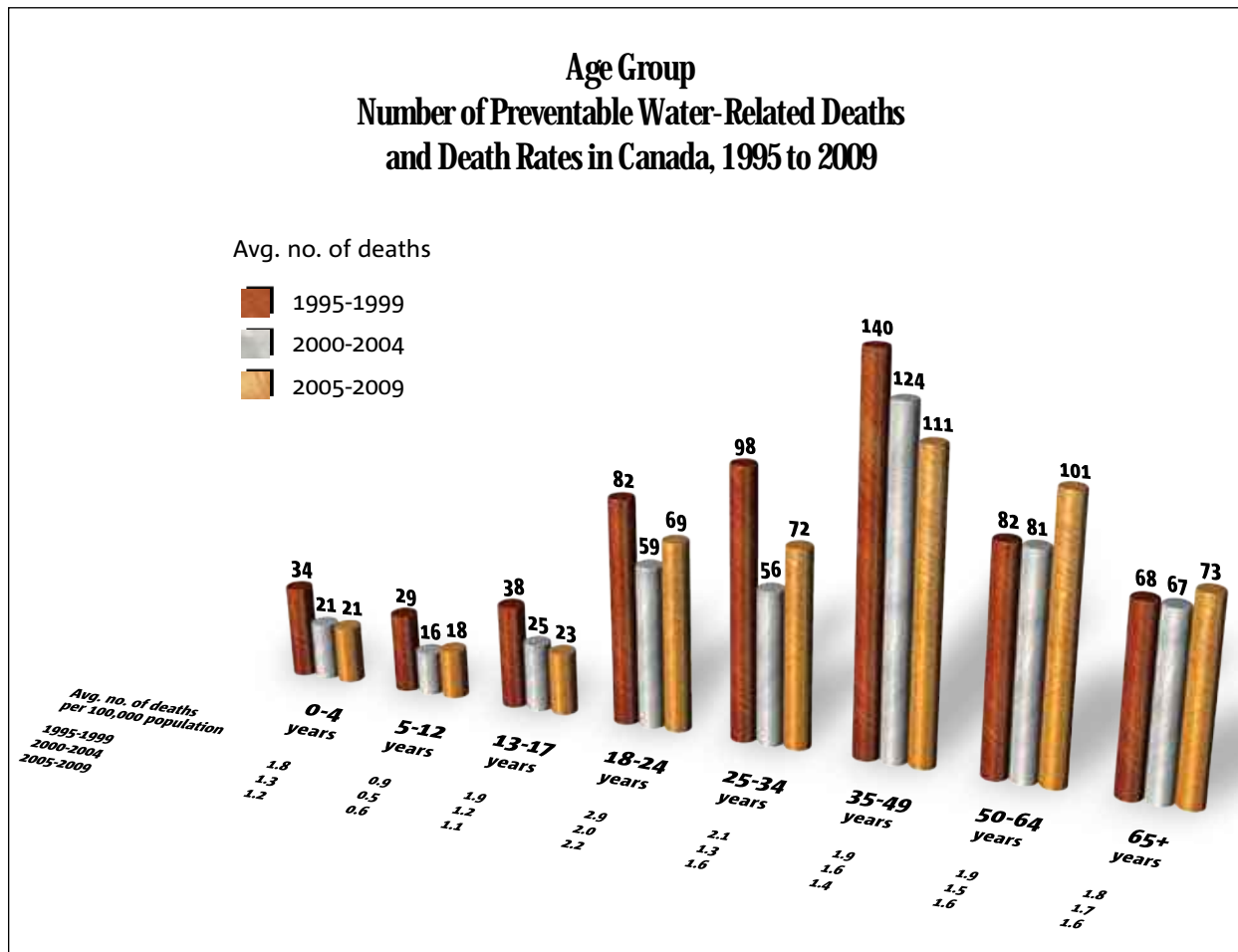
By age: The profile of “who” is drowning in Canada is getting older. With the 50- to 64-year-old population increasing fairly dramatically in Canada during the past five years (+20% in 2005 to 2009 versus 2000 to 2004), we see more water-related deaths among baby boomers (+25% for 50- to 64-year-olds). Every year since 2006, the number of drownings in this age group has reached a higher level than in earlier years. There could be more drownings among 50- to 64-year-olds than in any other age group if this trend continues.

There were also significantly more deaths among 18- to 34-year-olds during 2005 to 2009. Risk-taking 18- to 24-year-olds continue to have the highest water-related

death rate of any age group in Canada, at 2.2 per 100,000. They also account for a 17% increase in fatalities in the 2005 to 2009 period. The 25- to 34-year-old group had a 29% increase in fatalities and the largest increase in the water-related death rate of any age group, up to 1.6 during 2005 to 2009 (from 1.3 during 2000 to 2004).

It is encouraging to see the number of deaths and death rate among children stabilizing at a lower level. For children/toddlers under 5 years of age, older children 5 to 12 years and youth 13 to 17 years, the number of drownings and drowning death rates were fairly stable in 2005 to 2009 compared with 2000 to 2004, and well below 1995 to 1999 levels. This is a big improvement from the early 1990s, when children under 5 years had a drowning death rate as high as young, male adult risk-takers.

By gender: The vast majority of drowning victims continue to be men. Year after year, 8 out of 10 drowning victims are male. The skew to male victims is evident across all age groups, but most pronounced among 18- to 34-year-olds, where 9 of every 10 victims are male. This reflects higher risk behaviour around water among men than women. Overall, men accounted for 82% of Canada’s water-related deaths during 2005 to 2009.



When Are They Drowning?

The mix of “when” drownings are happening in Canada is shifting. More deaths occurred at night, on weekdays and during the winter/spring months during the past five years than were seen in the prior 15 years of tracking.

By time of day: While the majority of deaths occur during daytime (53%), there was a much bigger increase in drownings during the evening (+20%), and especially at night (+39%), than during the day (+10%) in 2005 to 2009 versus 2000 to 2004. This reflects big increases in deaths at night for 18- to 34-year-olds (+61%), and in the evening (+47%) and at night (+21%) for 50- to 64-year-olds. Recreational deaths are up by half (+52%) at night as well.

By day of the week: Half (51%) of 2005 to 2009 fatalities occur on the weekend (Friday to Sunday). There was a much bigger increase for weekday drownings (+17%) than weekend drownings (+2%) during 2005 to 2009 versus 2000 to 2004. This reflects a much larger increase among 50- to 64-year-old victims for weekday (+50%) than weekend (+9%) fatalities, and more deaths during recreational activities during the week (+14%) than on weekends (-4%).

By time of year: The warmer summer months (May through August) still accounted for the majority (57%)

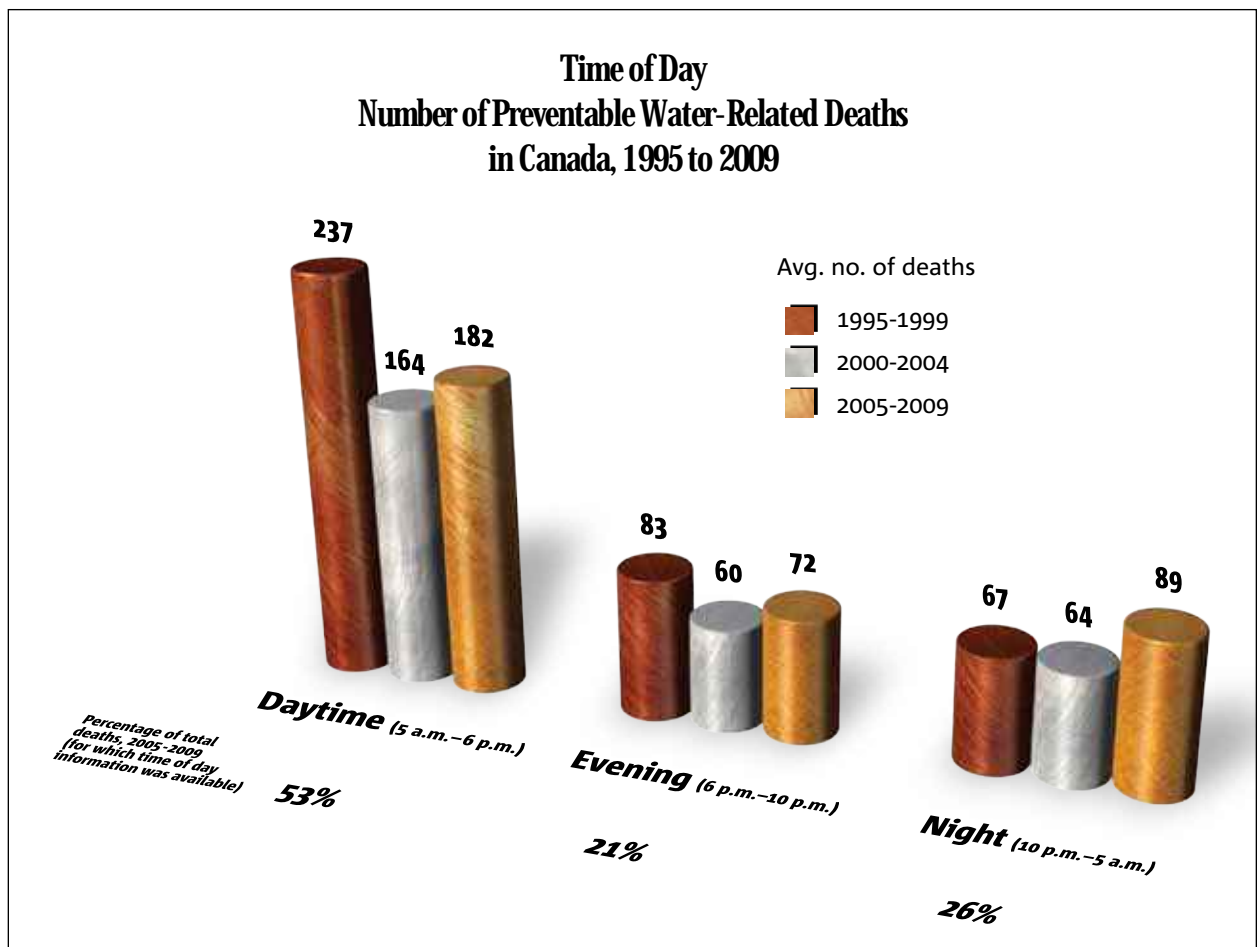
of 2005 to 2009 drownings, peaking in July/August (34%). One-quarter (27%) of deaths occurred during the colder winter/spring months (November through April).

The biggest seasonal increase was during the November through April winter/spring months (+18%), when cold water is a major risk factor in an unplanned sudden immersion. This increase reflects more deaths on ice (+25%) and more recreational snowmobiling deaths (+56%). Summer drownings were up +6% in 2005 to 2009 versus 2000 to 2004.

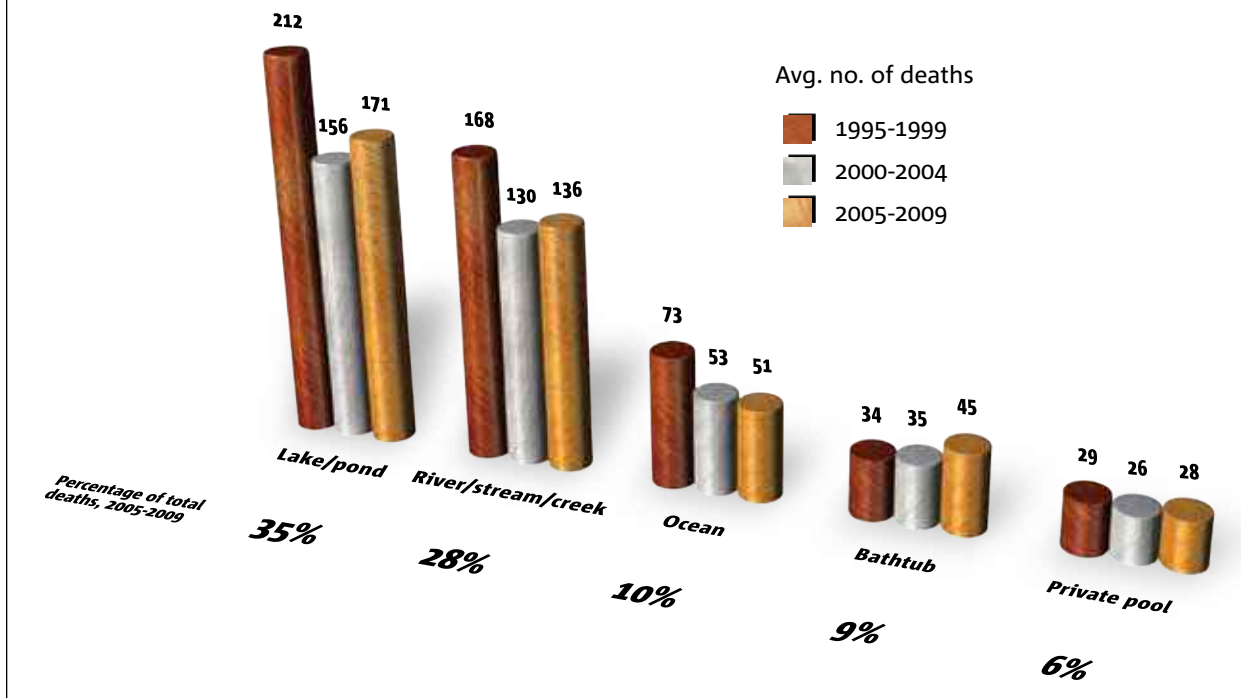
Where Are They Drowning?

By aquatic setting: Lakes/ponds (35%) and rivers/streams/creeks (28%) continue to account for 6 in 10 drownings. The largest increase in water-related deaths occurred in bathtubs (+29% in 2005 to 2009 versus 2000 to 2004). Almost all (91%) bathtub victims were alone. Young children under 5 years of age and seniors 65+ years are especially at risk in the bathtub—20% and 16%, respectively, of drowning deaths occurred in the bathtub for these two age groups.

Private backyard swimming pool deaths are fewer in number and continue at about the same level as in previous years. However, the backyard pool remains a key danger as the no. 1 aquatic setting where children under 5 years of age most often drown.



Top Five Aquatic Settings Number of Preventable Water-Related Deaths in Canada, 1995 to 2009



Drownings in Canada's public pools and waterparks continue to be low in number in these lifeguard-supervised environments, averaging 5 deaths per year during 2005 to 2009 (from a low of 2 in 2007 to a high of 6 in each of 2006 and 2009). Children 5 to 12 years were the most prevalent age group (39% of public pool/waterpark victims).

By region: The northern territories have the highest water-related death rates. The next highest rates are in Manitoba, British Columbia and Atlantic Canada.

Drownings increased most in Ontario (+20% in 2005 to 2009 versus 2000 to 2004) and Alberta (+25). This was partially offset by a decrease in British Columbia (-14%). Over a longer 10-year time frame, there have also been major decreases since 1995 to 1999 in Quebec, Nova Scotia and Saskatchewan. (See chart on page 6.)

What Were They Doing?

The profile of "what" drowning victims were doing when their fatal incident occurred has shifted.

By type of activity: The biggest increases during 2005 to 2009 compared with 2000 to 2004 were for bathing (+33%); near-water, non-aquatic activities (+20%); and transportation incidents (+36%). Deaths during in-water activities increased less (+8%).

For near-water, non-aquatic activities and transportation incidents, the number of deaths was consistently higher

during each of the most recent five years than during the previous five years. For bathing deaths, there was a dip in 2009, after four consecutive years of elevated numbers.

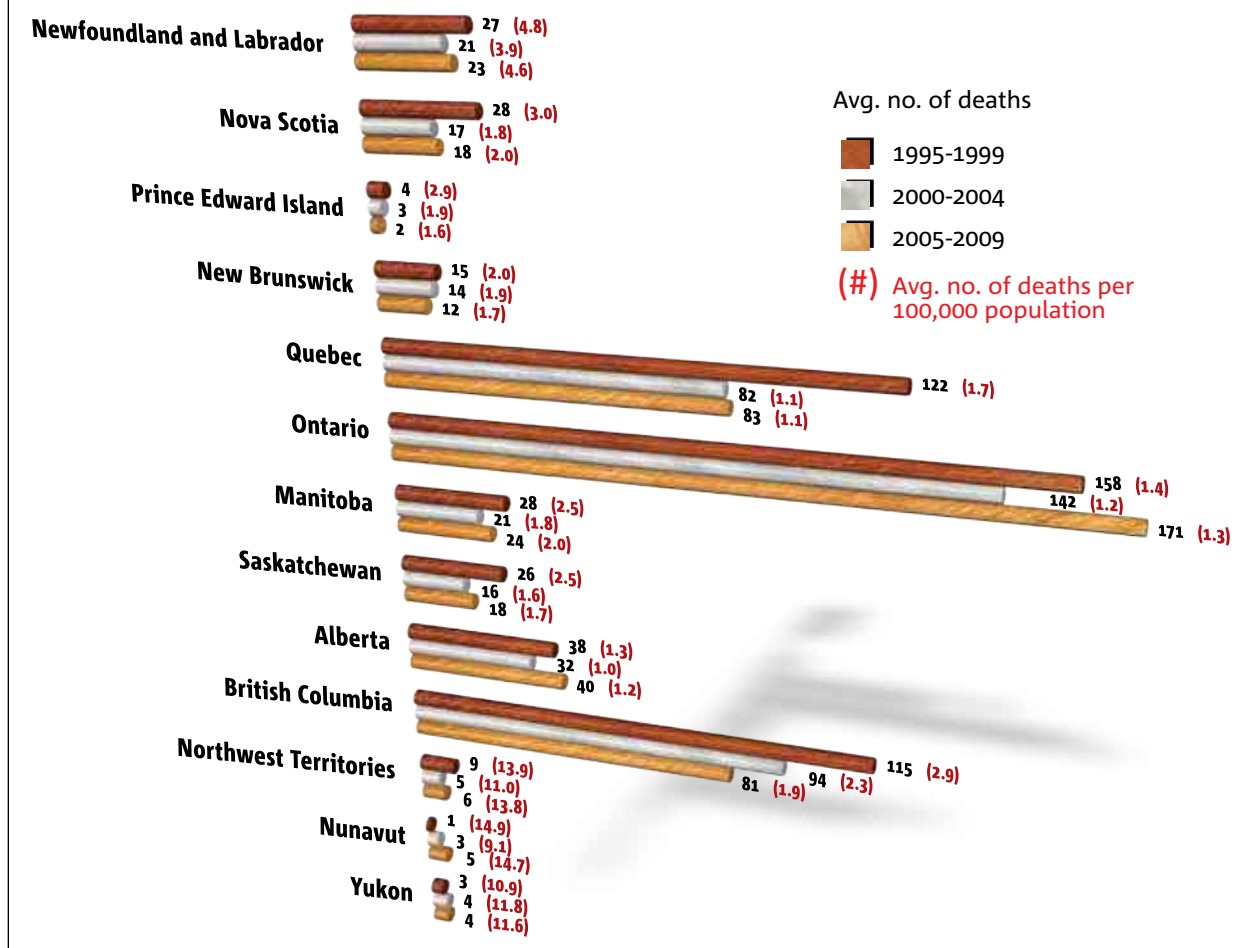
On the other hand, boating deaths during 2005 to 2009 were down 12% versus 2000 to 2004, and down by about one-third (-35%) versus 1995 to 1999. By type of craft, this reflects a major decrease in powerboat deaths (see chart on page 7). By size of powerboat, the biggest decrease was among small craft 5.5 metres and under, for which 2005 to 2009 fatalities were only about half of what they were during the 1990s. Fatalities involving other types of craft have remained more stable over time, although there has also been a reduction in canoeing fatalities during the past 10 years relative to the 1990s.

By purpose of activity: Activities of daily living deaths were up 24% during 2005 to 2009, accounting for one-quarter (26%) of water-related deaths. About one-third (35%) of daily living fatalities occur while bathing, especially among young children and the elderly. About one-third (34%) involve motor vehicle transportation; for example, where the vehicle goes off a road or bridge, or through ice—especially among 18- to 49-year-olds.

Recreational activities continue to account for the majority of Canadian drownings (59%) and were up slightly (+4%) in 2005 to 2009 versus 2000 to 2004.

Among specific recreational activities, swimming is still the activity during which the largest number of drownings

Province and Territory Number of Preventable Water-Related Deaths and Death Rates in Canada, 1995 to 2009



occur, followed by powerboating and sport fishing (see chart on page 8). Deaths while swimming increased slightly during 2005 to 2009 (+6%), while powerboating and sport fishing deaths were stable. Snowmobiling, walking near water, playing in water/wading and partying were other recreational activities for which there were more drownings in 2005 to 2009.

Why Did They Drown?...

Risk Factors

The major risk factors contributing to “why” victims drowned remain consistent with those the Lifesaving Society has identified in the past. (See table on page 9.)

Boating: The major risk factors cited in fatal boating incidents were not wearing a personal flotation device (PFD)/lifejacket (79% of 2005 to 2009 boating deaths for which PFD information was available); cold water (44%); capsizing (39%) and falling overboard (25%), often in rough water (20%); alcoholic beverage consumption

(39%); and boating alone (29%) versus 71% of boating victims with a companion or companions who were unable to rescue them.

Swimming: Victims unable to swim (34% of victims for whom swimming ability information was available); alcohol consumption (31%); swimming alone (22%) versus 78% of swimming victims with a companion or companions who could not rescue them; and heart disease/suffering a heart attack while swimming (20%).

Children under 5 years of age: Alone near water (62%), often during a momentary absence or lapse of caregiver’s attention (55%).

Men 18 to 34 years of age: Not wearing a PFD (82% of relevant situations); cold water (51%); alcoholic beverage consumption (48%); after dark (37%); and alone (34%) or 66% with a companion or companions who could not rescue them.

Baby boomers 50 to 64 years of age: Not wearing a PFD in relevant situations (74%); cold water (52%); alone

(58%) or with a companion or companions who could not rescue them (42%); alcoholic beverage consumption (37%); heart disease/suffering a heart attack (24%); and after dark (23%).

Seniors 65+ years: Not wearing a PFD in relevant situations (82%); alone (72%) or with a companion or companions who could not rescue them (28%); cold water (52%); heart disease/suffering a heart attack (47%); and alcoholic beverage consumption (20%).

Research Methodology

Complete Data From 1995 to 2009

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:

- 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 and Canada overall resulting from incidents “in, on or near”

water—near-water incidents were included if the incident was closely related to a 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 preventable (unintentional) deaths, not deaths due to natural causes, suicide or homicide.

Interim Data From 2010 and 2011

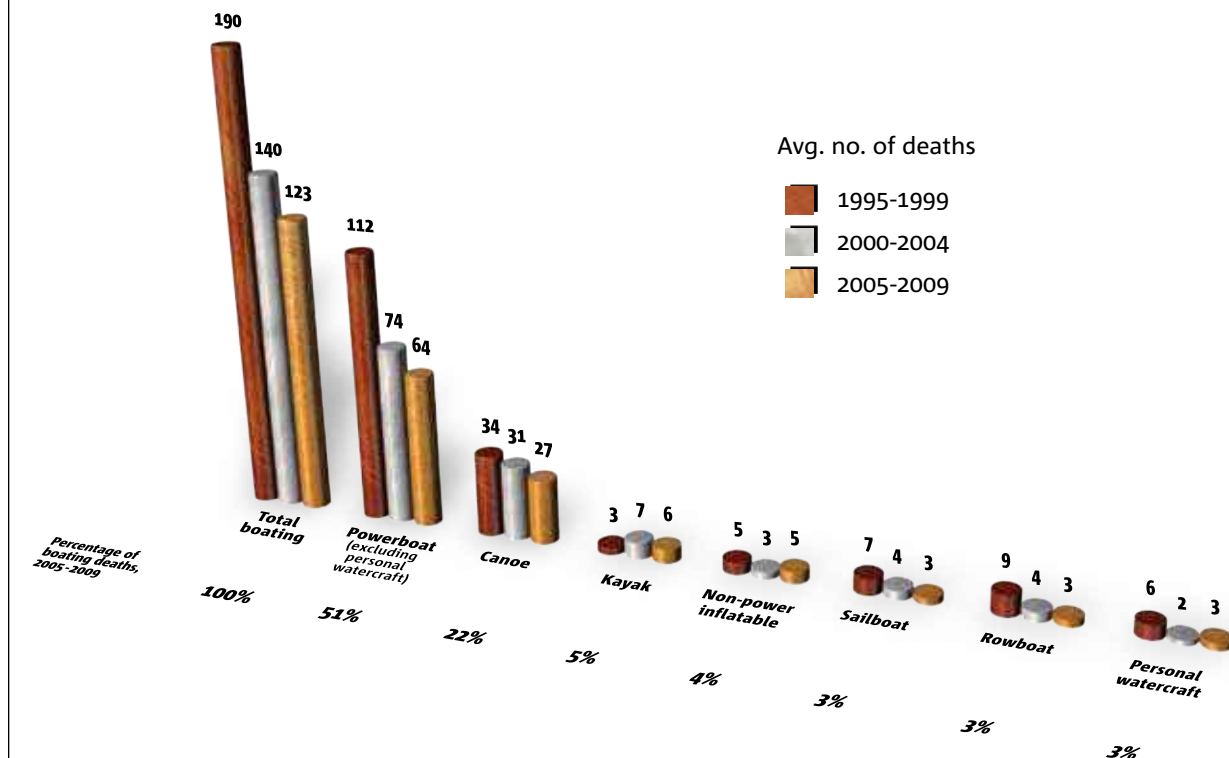
Complete final data on more recent drownings and other water-related deaths are not yet available from the provincial/territorial offices of the Chief Coroner or Chief Medical Examiner. The interim, preliminary data are derived from media releases, media clippings, news reports and Internet searches.

Acknowledgements

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

- The office of the Chief Coroner or Chief Medical Examiner in each province and territory, which permitted and facilitated confidential access to coroners’ or medical examiners’ reports on preventable

Boating Incidents by Type of Vessel
Number of Preventable Water-Related Deaths
in Canada, 1995 to 2009



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' and medical examiners' files.

About the Lifesaving Society

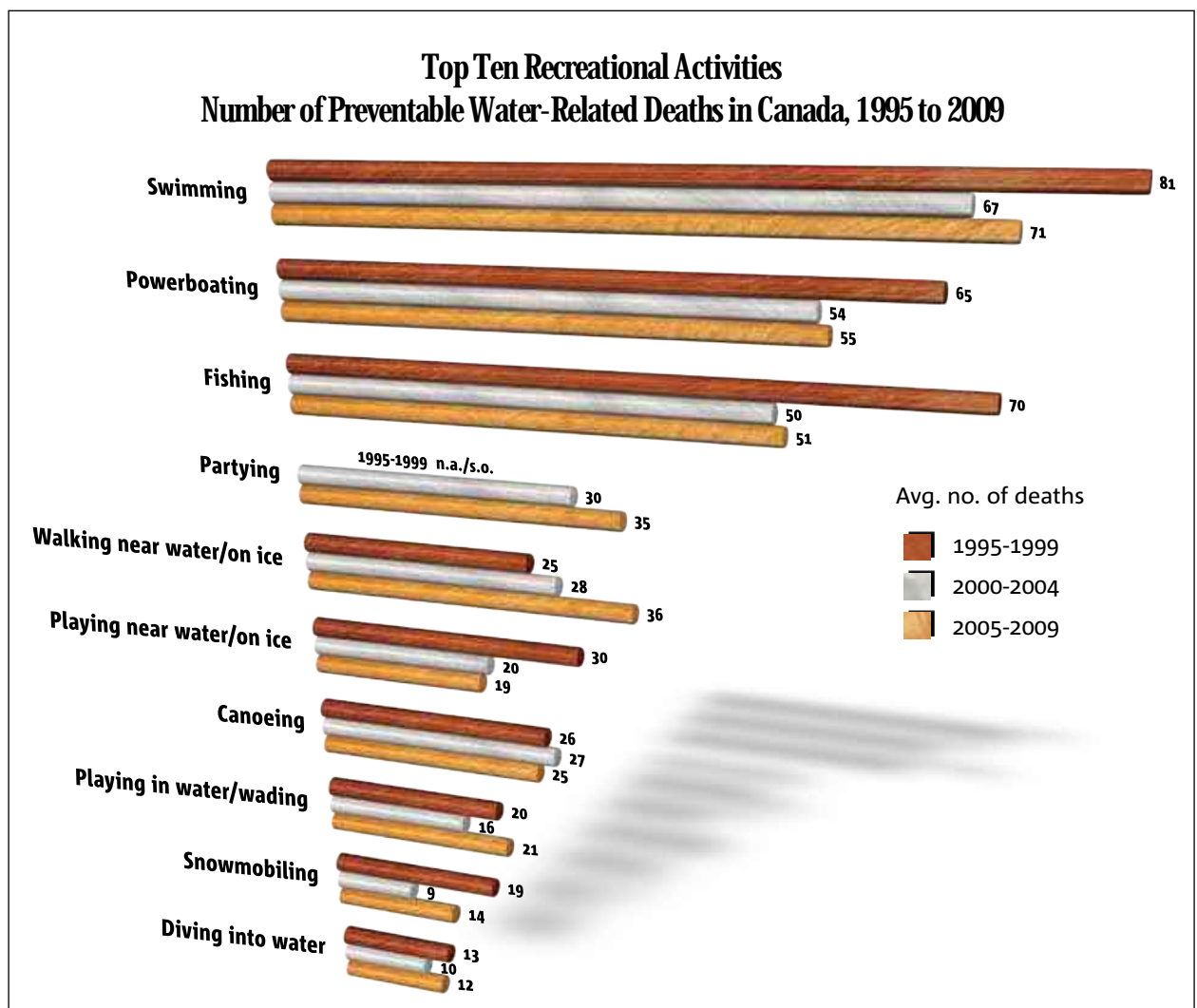
The Lifesaving Society—Canada's lifeguarding experts—works to prevent drowning and water-related injury through its training programs, Water Smart® public education, aquatic safety management, drowning research and lifesaving sport. The Society is also a leader and partner in the delivery of water safety education through participation in the international lifesaving organizations.

We are a national, volunteer organization and registered charity composed of 10 provincial/territorial Branches, tens of thousands of individual members, and over 4,000 affiliated swimming pools, waterfronts, schools and clubs.

Annually, over 800,000 Canadians participate in the Lifesaving Society's swimming, lifesaving, lifeguarding and leadership training programs. The Society sets the standard for aquatic safety in Canada and certifies Canada's National Lifeguards.

About the 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 injuries and rescue interventions. For more information, contact Barbara Byers, Research Director, at experts@drowningresearch.ca or 416-490-8844.



Key Risk Factors

Percentage of Preventable Water-Related Deaths in Canada, 1995 to 2009

	Total			2005 - 2009					
	1995-1999	2000-2004	2005-2009	Boating	Swimming	Under 5 Yrs.	18-34 Yrs.	50-64 Yrs.	65+ Yrs.
PFD/lifejacket not worn (percentage of known relevant situations)	80	81	77	79	*	*	82	74	82
Alcohol consumption	33	34	35	39	31	0	48	37	20
With others	59	53	52	71	78	38	66	42	28
Alone	41	47	48	29	22	62	34	58	72
Momentary absence of caregiver**	n.a./s.o.	n.a./s.o.	33**		3	55			
Cold water	65	60	49	44	5	22	51	52	52
Rough water				20					
Capsized				39					
Fell overboard				25					
After dark	25	24	26	19	11	1	37	23	18
Heart disease	9	11	15	13	20	0	2	24	47

* Very small sample size, too small to report.

** Percentage of deaths where victim was a child less than 15 yrs. and was under adult supervision at time of incident.

Significant risk factors

Not as applicable to these subgroups, or sample size too small to report

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ISSN 1929-5405

