

FIRE IN THE U.S. AND CANADA

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FIRE IN THE U.S. AND CANADA, 2001

	U.S.	Canada
Fire Incidents	1,734,500	55,300
Civilian Deaths	6,196	337
Excluding Events of 9/11	3,745	
Civilian Injuries	21,100	1,754
Excluding Events of 9/11	20,300	
Property Damage	\$44.023 Billion	\$1.421 Billion Canadian (= \$0.917 Billion U.S.)
Excluding Events of 9/11	\$10.583 Billion	
Population (resident)	285,094,000	31,082,000
Area (square miles)	3,720,000	3,560,000
Gross Domestic Product	\$10,020 Billion	\$1,076 Billion Canadian (= \$694 Billion U.S.)

Sources: *Annual Report 2001: Fire Losses in Canada*, Ottawa, Ontario: Association of Canadian Fire Marshals and Fire Commissioners, November 2004; Michael J. Karter, Jr., *Fire Loss in the United States During 2001*, NFPA Fire Analysis & Research Division, November 2002; *Statistical Abstract of the United States 2004-2005*, Washington: U.S. Bureau of the Census, 2004; gross domestic product data from Organization for Economic Cooperation and Development.

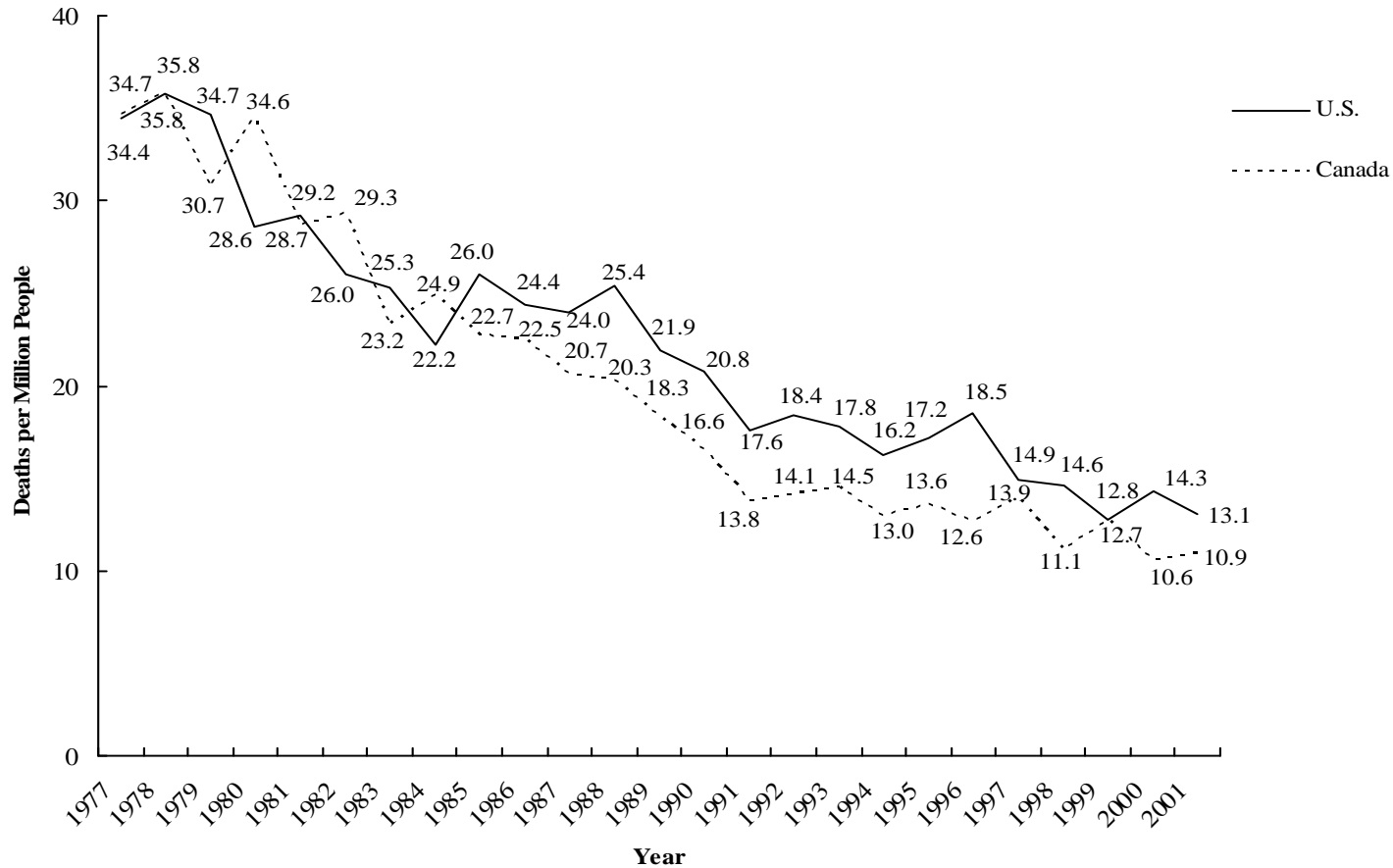
The United States (U.S.) has a population roughly nine times as large as Canada's in an area roughly the same size as Canada's. The apparent low population density of Canada as a whole is misleading, because nearly all of Canada's population lives near its southern border, within 150 miles of the U.S. This also means that Canada's environmental conditions are not dramatically different from those northernmost U.S. states.

The U.S. reported 31 times as many fires as did Canada in 2001. Most of this difference was in outdoor brush, grass, and trash fires and in vehicle fires. However, the ratio was 18 to 1 for U.S. residential fires to Canadian residential fires, which is still much larger than the population ratio, suggesting a higher per capita fire incident rate in the U.S. even after adjusting for differences in what is reported.

Based on the 2001 exchange rate of \$1.549 Canadian dollars to each U.S. dollar, the U.S. economy, measured by gross domestic product (GDP), was 14.4 times as large as the Canadian economy. This ratio is more than one-half larger than the ratio of the two countries' populations. U.S. direct property losses to fire were about 11.5 times as large as Canadian losses, if the unique events of September 11, 2001, are excluded.

Sources: *Annual Report 2001: Fire Losses in Canada*, Ottawa, Ontario: Association of Canadian Fire Marshals and Fire Commissioners, November 2004; Michael J. Karter, Jr., *Fire Loss in the United States During 2001*, NFPA Fire Analysis & Research Division, November 2002; *Statistical Abstract of the United States 2004-2005*, Washington: U.S. Bureau of the Census, 2004; gross domestic product data from Organization for Economic Cooperation and Development.

Civilian Fire Death Rates, U.S. and Canada



Sources: NFPA survey, annual reports from Association of Canadian Fire Marshals and Fire Commissioners; early years show revisions in later reports.

Note: 2001 U.S. rate excludes events of 9/11.

Civilian fire death rates per million population have long been higher in both the U.S. and Canada than in almost any other industrialized country outside the former Soviet bloc. Rates in the two countries have usually been close, and so have trends.

In the five-year period of 1977-1981, Canada's civilian fire death rates were higher than those in the U.S. but by only 1% on average. Since then, U.S. rates have been higher than Canadian rates.

A principal reason for the recent difference between the U.S. and Canada is that cars, trucks, and other vehicles accounted for 13% of U.S. fire deaths in 2001 and only 7% of Canadian fire deaths. This difference may reflect differences in rates of traffic incidents generally. For example, in the most recent year for which data are available (1998), the U.S.'s death rate due to motor vehicle crashes was 65% higher than Canada's (*International Accident Facts*, 3rd edition, Itasca, IL: National Safety Council, 2002, p. 50).

**Canada Civilian Fire Deaths per Million People
1997 – 2001 Annual Averages, by Province or Territory**

Province	Rates
Alberta	12.0
British Columbia	9.4
Manitoba	21.3
New Brunswick	11.4
Newfoundland*	12.9
Nova Scotia	8.3
Ontario	10.7
Prince Edward Island*	14.5
Quebec	11.1
Saskatchewan	14.4
 Territory	
Northwest Territories	30.8
Yukon	13.0
 National average of listed territories and provinces	 11.2

*These provinces did not report for all five years. Their rates are based on the years when they reported.

Source: Annual reports from Association of Canadian Fire Marshals and Fire Commissioners; excludes national defense and other Federal lands, and First Nation reserves.

Canada's provinces and territories may be sorted into four groups, based on their civilian fire death rates per million population and how those rates compare with the rates in the neighboring U.S. (See the next page for a state list of the U.S.)

The highest civilian fire death rates are usually in the sparsely populated territories, the Northwest Territories and the Yukon. In 1997-2001, the civilian fire death rate for the Northwest Territories was nearly three times the national average. The rate in the Yukon was actually fifth highest behind Manitoba, Prince Edward Island, and Saskatchewan. Because the populations are so small, these rates are extremely volatile. (For the Yukon, they represent only two deaths in five years.)

The three provinces that have historically had the lowest provincial fire death rates - British Columbia, Ontario, and Quebec - are also the three most populous provinces, so their fire experience dominates the national average. The rates in Ontario and Quebec are comparable to all of, and lower than most of, the rates in neighboring Maine, Michigan, New York, and Vermont but not New Hampshire. British Columbia's fire death rate is comparable to neighboring Washington's.

The four maritime provinces – New Brunswick, Newfoundland, Nova Scotia, and Prince Edward Island – all experienced substantial declines in fire death rates in recent years. Two of them – New Brunswick and Nova Scotia – now rank with the three lowest-rate provinces, and Nova Scotia was the overall lowest in 1997-2001. The other two – Newfoundland and Prince Edward Island – have had only intermittent reporting in recent years and cannot be ranked with confidence.

The province of Manitoba had the second highest fire death rate, after the Northwest Territories. Alberta and Saskatchewan, with the Yukon, had higher fire death rates than the five lowest fire death-rate provinces of British Columbia, New Brunswick, Nova Scotia, Ontario, and Quebec.

*These provinces did not report for all five years. Their rates are based on the years when they reported.

Source: Annual reports from Association of Canadian Fire Marshals and Fire Commissioners; excludes national defense and other Federal lands, and First Nation reserves.

**U.S. Civilian Fire Deaths per Million People
1997 – 2001 Annual Averages, by State**

State	Average	State	Average
Alabama	25.9	Montana	10.2
Alaska	20.5	Nebraska	9.6
Arizona	8.4	Nevada	8.7
Arkansas	24.2	New Hampshire	7.9
California	6.4	New Jersey	8.7
Colorado	5.3	New Mexico	8.5
Connecticut	8.1	New York	10.7
Delaware	11.6	North Carolina	15.7
Florida	8.2	North Dakota	8.4
Georgia	15.8	Ohio	11.7
Hawaii	5.1	Oklahoma	17.3
Idaho	8.2	Oregon	9.4
Illinois	12.2	Pennsylvania	15.1
Indiana	14.4	Rhode Island	7.9
Iowa	12.1	South Carolina	20.1
Kansas	14.4	South Dakota	9.1
Kentucky	17.1	Tennessee	23.1
Louisiana	21.3	Texas	11.4
Maine	12.3	Utah	4.2
Maryland	10.9	Vermont	16.2
Massachusetts	8.7	Virginia	12.5
Michigan	14.9	Washington	9.4
Minnesota	8.3	West Virginia	18.1
Mississippi	32.1	Wisconsin	9.4
Missouri	16.6	Wyoming	6.9
National average of 50 states, excluding District of Columbia and possessions			12.0

Source: U.S. death certificate data from National Center for Health Statistics, state population data from *Statistical Abstract of the United States 2001*. Some deaths in intentional fires may be grouped elsewhere as homicides or suicides, and most deaths in vehicle post-crash fires will be listed under crashes. Consequently, state fire marshals' offices may have different data.

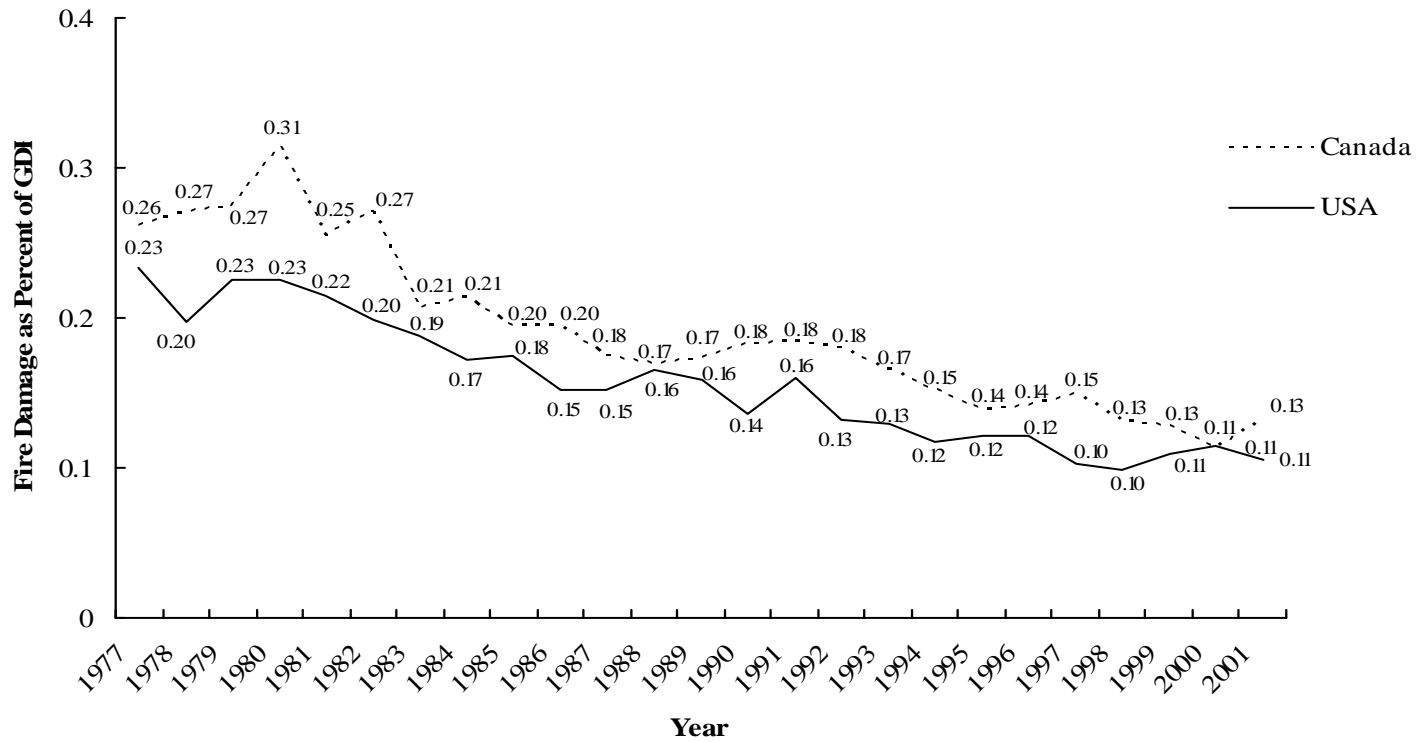
Civilian fire deaths in the U.S. and Canada are led by smoking materials (both lighted tobacco products and lighting implements, excluding fires caused by children playing or intentional firesetting with those objects), which account for nearly one-fourth of the total in both countries. Statistics on smoking fires are usually presented without including lighting implements in the U.S. and with them in Canada.

Heating fires are *not* a larger cause of death in Canada than in the U.S., which reinforces the U.S. pattern that cold weather is not a key to high rates of heating fire deaths. In fact, heating equipment has its largest share of U.S. fire deaths in the comparatively warm southeastern states, where winters are shorter and milder. The heating fire problem in these states is dominated by portable and fixed space heaters and is especially severe among the rural poor.

Note that the U.S. state rates are based on death certificates, not the fire department reports used in the earlier analysis of national totals. These rates will tend to exclude nearly all vehicle fire deaths, which were 8% of the Canadian total in 1997-2001, and some incendiary fire deaths, which may be categorized as homicides or suicides and accounted for 17% of Canada's civilian fire deaths in 1997-2001.

Source: U.S. death certificate data from National Center for Health Statistics, state population data from *Statistical Abstract of the United States 2001*. Some deaths in intentional fires may be grouped elsewhere as homicides or suicides, and most deaths in vehicle post-crash fires will be listed under crashes. Consequently, state fire marshals' offices may have different data.

Fire Loss Rates, U.S. and Canada



Sources: NFPA survey, annual reports from Association of Canadian Fire Marshals and Fire Commissioners; GDP data from OECD.

Note: U.S. 2001 rate excludes the events of September 11.

The U.S. fire loss rate relative to gross domestic product is usually lower than the Canadian rate, though rarely by much. The U.S. rate was higher in 2000, but by only 2%, and was lower in 2001 only because the unique events of September 11 were not included in the calculation.

Sources: NFPA survey, annual reports from Association of Canadian Fire Marshals and Fire Commissioners; GDP data from OECD.

Additional resources for international statistics

CTIF- International Association of Fire and Rescue Services
World fire statistics on fire issues from 80 different countries and 90 capital cities.
www.ctif.org

The Geneva Association-World Fire Statistics Centre (WFSC)
Internationally comparable fire statistics
www.genevaassociation.org/Affiliated_Organizations/WFSC.aspx