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Human Activity and the Environment: Detailed Statistics

2011

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Human Activity and the Environment: Detailed Statistics

2011

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Symbols

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.	not available for any reference period
..	not available for a specific reference period
...	not applicable
0	true zero or a value rounded to zero
0s	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
*	significantly different from reference category ($p < 0.05$)

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Overview

Human Activity and the Environment: Detailed statistics is a collection of statistics focusing on human activities from an environmental perspective. The report is divided into 13 themes or sections, and includes 105 data tables and 8 maps. Accompanying text serves to place the information in context and guide the reader through the detailed holdings. Data are compiled from many sources including Statistics Canada, Agriculture and Agri-Food Canada, Environment Canada, Fisheries and Oceans Canada, Natural Resources Canada, Transport Canada, Canadian Council of Forest Ministers and Canadian Council on Ecological Areas.

Section 1

Physical geography

This section provides descriptive information on Canada's physical environment.

1.1 Terrestrial ecozones

"An ecosystem is a system in which the interaction between different organisms and their environment generates a cyclic interchange of materials and energy."[1] Ecosystems can also be defined as biological communities that are hierarchical, integrated, dynamic and self-sustaining. In recognition of the need to assess Canadian ecosystems, *A National Ecological Framework for Canada*[2] was developed. This classification framework is hierarchical and delineates, classifies and describes ecologically distinct areas of Canada's surface at different levels of detail. The ecological framework was developed by identifying distinct areas of non-living (abiotic) and living (biotic) factors that are ecologically related. From the broadest to the smallest, the hierarchical classification consists of seven levels of generalization: ecozones, ecoprovinces, ecoregions, ecodistricts, ecosections, ecosites and ecoelements. Map 1.1 illustrates the delineation of the country's 15 terrestrial ecozones.

1.2 Land cover

Land cover information describes the surface characteristics of the land, such as vegetation type, perennial ice and snow cover and water and wetland distribution. Canada's land and water area totals nearly 10 million km^2. Table 1.1 and Map 1.2 show the distribution of broad land cover types across Canada.

1.3 Hydrology

Drainage areas, or watersheds, are natural hydrological units that bound the movement of surface water as part of the Earth's hydrological cycle. These units gather precipitation, which is either absorbed within the area or is discharged at the outlet of the drainage area. Because drainage areas are contained systems, they are useful for monitoring water flow and quality. Delineating drainage areas is important in order to maintain secure supplies of clean water, identify sources of pollution and protect communities from flooding.

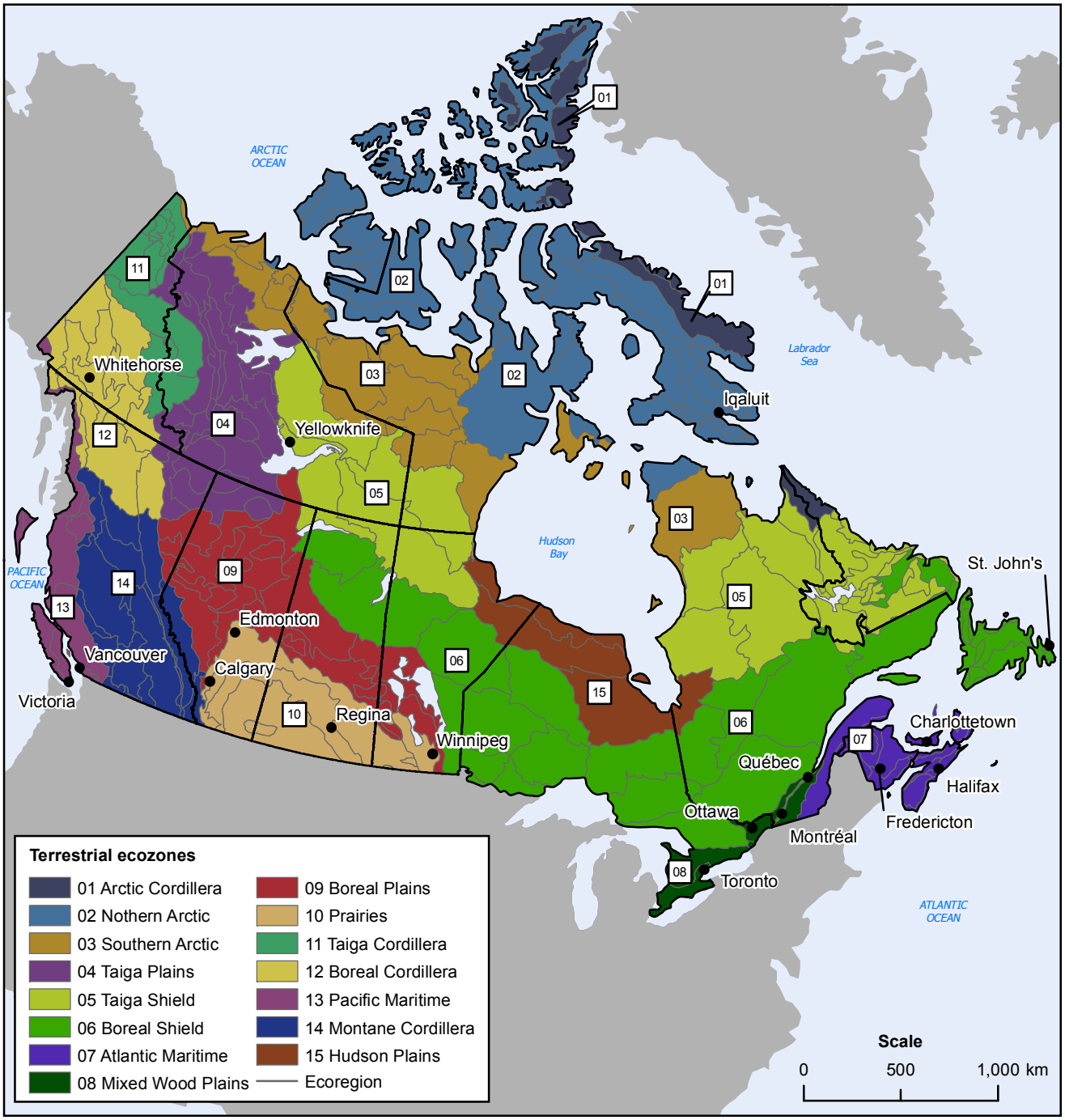
Statistics Canada's drainage area geography[3] is divided into five ocean drainage areas: the Pacific Ocean, the Arctic Ocean, the Atlantic Ocean, Hudson Bay, and the Gulf of Mexico. These drainage areas are further subdivided into 25 drainage regions (Map 1.3).

Most of Canada's surface freshwater flows northward. An estimated 12% of Canada, or 1.2 million km^2, is covered by lakes and rivers (Table 1.2).

The supply of freshwater, or Canada's renewable freshwater resources, is represented by water yield. Water yield is the amount of freshwater derived from unregulated flow measurements for a given geographic area over a defined period of time and is an estimate of the renewable water. Table 1.3 shows the average annual water yield by drainage region for 1971 to 2004 while Table 1.4 shows yearly yield data for 13 drainage regions. Table 1.5 contains median monthly water yield for selected drainage regions. Variation in water yield amongst the 25 drainage regions in Canada is illustrated as a volume per unit area in Map 1.4 and as a depth in Map 1.5. The largest yields of renewable fresh water are on the two coasts.

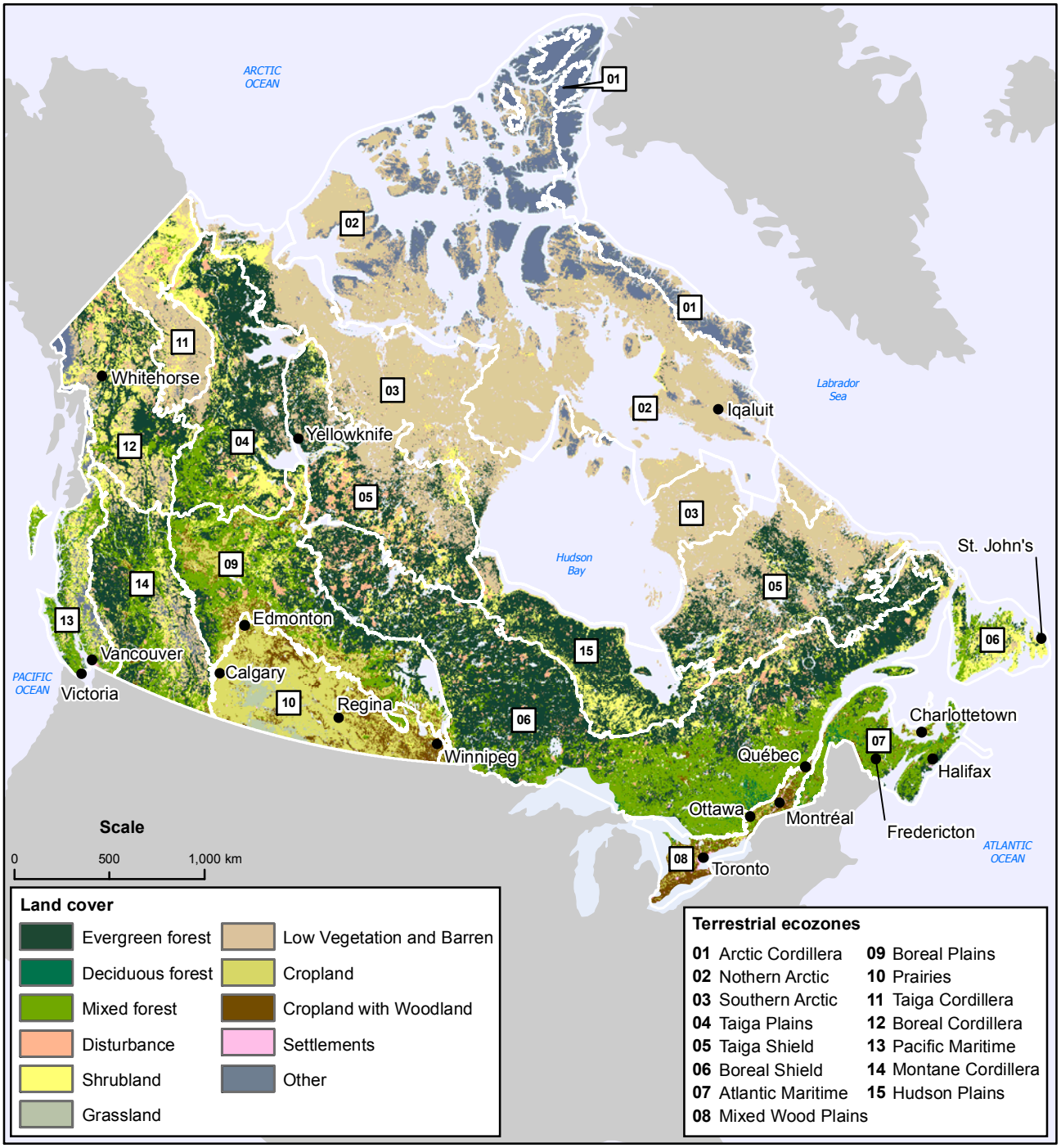
1. United Nations Statistics Division, Department for Economic and Social Information and Policy Analysis, 1997, "Glossary of Environment Statistics," *Studies in Methods*, Series F, no. 67, New York.
2. Agriculture and Agri-Food Canada and Environment Canada, 2005, *A National Ecological Framework for Canada*, *http://sis.agr.gc.ca/cansis/nsdb/ecostrat/gis_data.html* (accessed January 13, 2009).
3. Statistics Canada, Standards Division, 2009, *Standard Drainage Area Classification (SDAC) 2003*, *www.statcan.gc.ca/subjects-sujets/standard-norme/sdac-ctad/sdac-ctad-eng.htm* (accessed February 18, 2011).

Map 1.1
Terrestrial ecozones



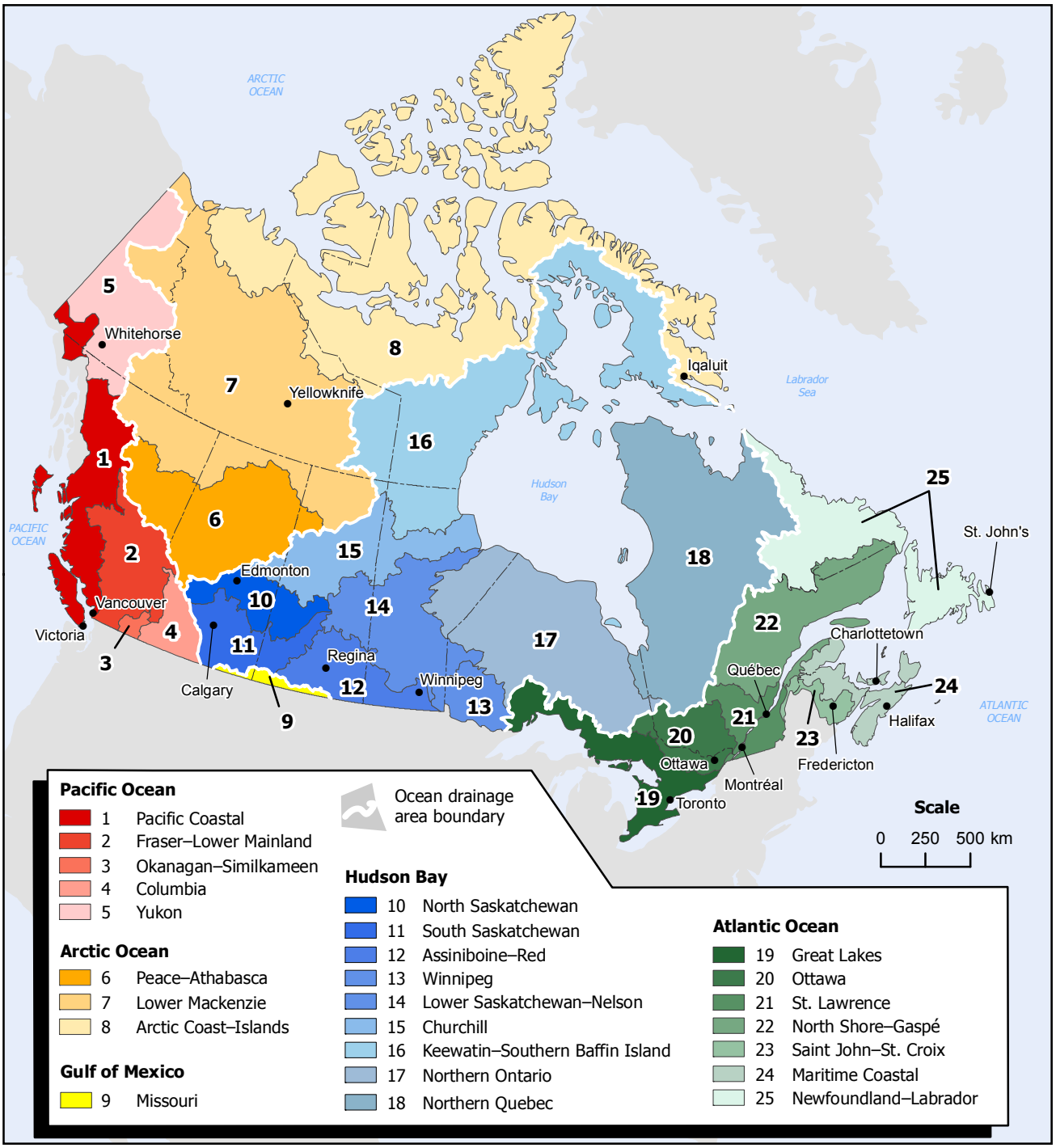
Source(s): Wiken, E.B., D. Gauthier, I. Marshall, K. Lawton and H. Hirvonen, 1996, *A Perspective on Canada's Ecosystems: An Overview of the Terrestrial and Marine Ecozones*, Canadian Council on Ecological Areas, Occasional Paper, no. 14, Ottawa.

Map 1.2
Land cover, 2006



Source(s): Agriculture and Agri-Food Canada and Environment Canada, 2005, *A National Ecological Framework for Canada*, http://sis.agr.gc.ca/cansis/nsdb/ecostrat/gis_data.html (accessed January 13, 2009). Latifovic, Rasim and Darren Pouliot, 2005, "Multi-temporal land cover mapping for Canada: Methodology and Products," *Canadian Journal of Remote Sensing*, Vol. 31, no. 5, pages 347 to 363. Statistics Canada, Environment Accounts and Statistics Division, 2010, special tabulation.

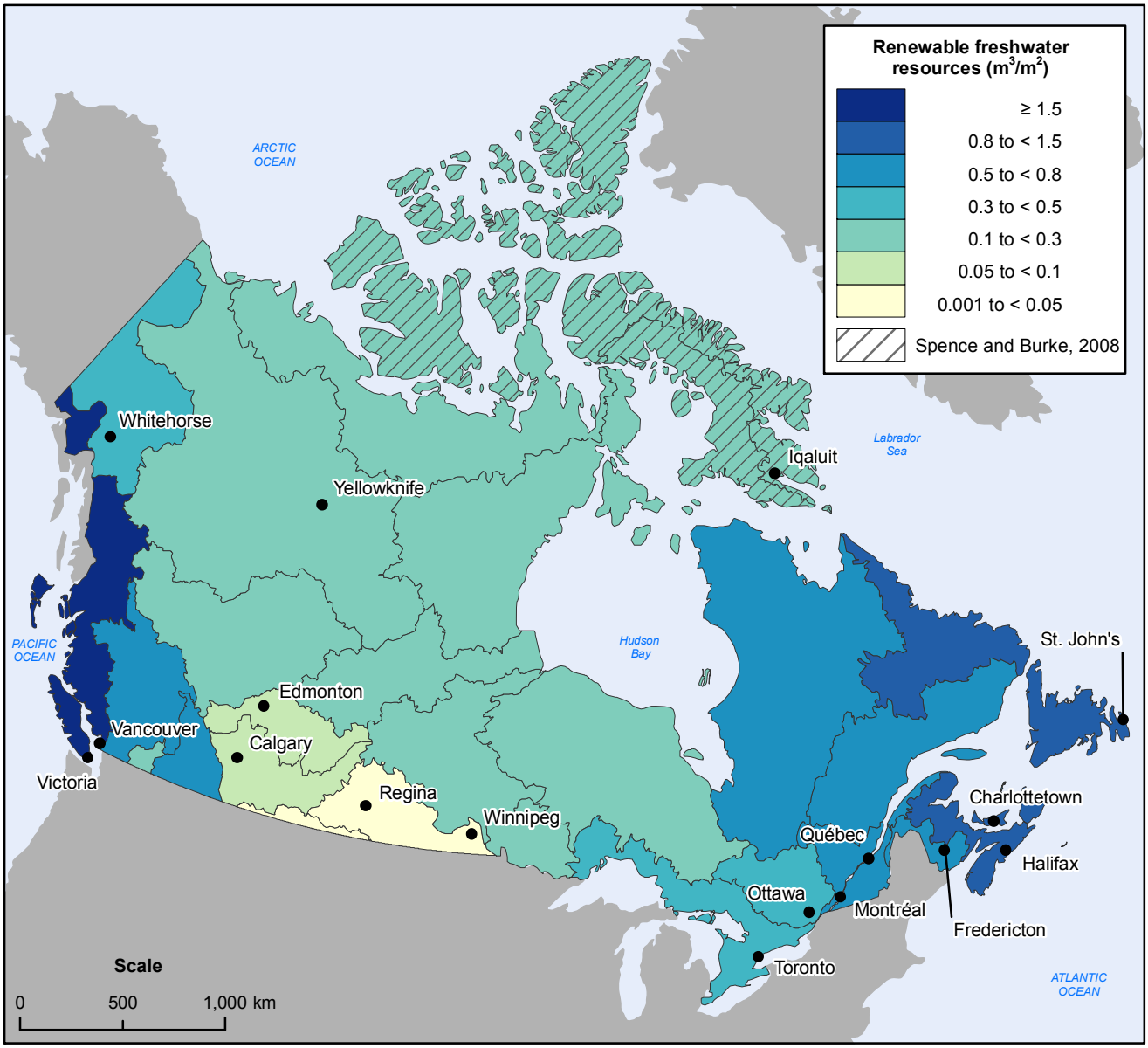
Map 1.3
Ocean drainage areas and drainage regions



Source(s): Pearse, P.H., F. Bertrand and J.W. MacLaren, 1985, *Currents of Change: Final Report of the Inquiry on Federal Water Policy*, Environment Canada, Ottawa.
Statistics Canada, Environment Accounts and Statistics Division, 2009, special tabulation.

Map 1.4

Average annual water yield by drainage region, 1971 to 2004

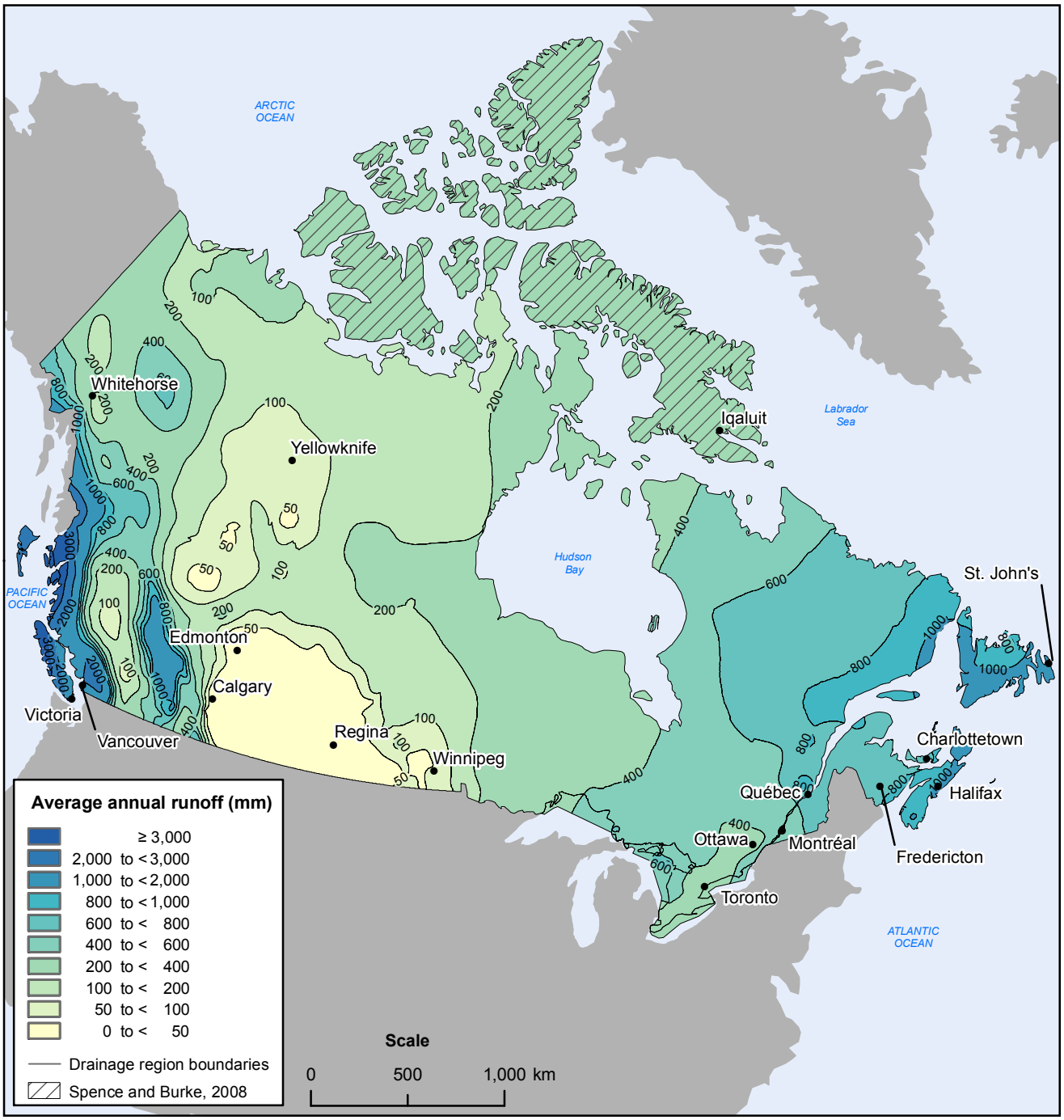


Note(s): Data for Canada were derived from discharge values contained in Environment Canada, Water Survey of Canada, 2010, *Archived Hydrometric Data*, www.wsc.ec.gc.ca/applications/H2O/index-eng.cfm (accessed March 31, 2011).
The water yield estimates are 34-year annual averages (1971 to 2004), with the exception of those estimates for drainage regions 5, 7, 16, 17, 18 and the Labrador portion of 25 which are based on 20 years of data (1975 to 1996); and drainage region 8 which is based on a 23-year annual average (1972-1994) for the Arctic Archipelago (Spence and Burke 2008), and on a 20-year annual average (1975 to 1996) for the remaining area

Source(s): Food and Agriculture Organization of the United Nations, 2009, *AQUASTAT main country database*, www.fao.org/nr/water/aquastat/dbase/index.stm (accessed December 15, 2009). Spence C. and A. Burke, 2008, "Estimates of Canadian Arctic Archipelago Runoff from Observed Hydrometric Data," *Journal of Hydrology*, Vol. 362, pages 247 to 259. Statistics Canada, Environment Accounts and Statistics Division, 2010, special tabulation.

Map 1.5

Average annual runoff, 1971 to 2004



Note(s): Data were derived from discharge values contained in Environment Canada, Water Survey of Canada, 2010, *Archived Hydrometric Data*, www.wsc.ec.gc.ca/applications/H2O/index-eng.cfm (accessed March 31, 2011).

Source(s): Spence C., and A. Burke, 2008, "Estimates of Canadian Arctic Archipelago Runoff from Observed Hydrometric Data," *Journal of Hydrology*, Vol. 362, pages 247 to 259. Statistics Canada, Environment Accounts and Statistics Division, 2010, special tabulation.

Table 1.1
Land cover by ecozone, 2006

	Forest	Disturbance[1]	Shrubland	Grassland	Low vegetation and barren	Cropland	Cropland with woodland	Settlements	Water	Ice and snow	Total[2]
	thousands of square kilometres										
Total	**3,702**	**267**	**1,001**	**48**	**2,411**	**418**	**233**	**16**	**1,184**	**698**	**9,976**
Arctic Cordillera	0	0	0	0	57	0	0	0	11	177	246
Northern Arctic	2	0	9	0	937	0	0	0	158	416	1,521
Southern Arctic	52	1	38	0	596	0	0	0	151	13	852
Taiga Plains	373	29	122	0	43	0	1	0	88	0	657
Taiga Shield	498	73	123	0	428	0	0	0	271	0	1,393
Boreal Shield	1,328	86	182	0	33	2	8	2	277	0	1,918
Atlantic Maritime	166	1	3	0	0	8	12	1	10	0	201
Mixed Wood Plains	27	1	3	0	0	18	54	7	60	0	170
Boreal Plains	405	24	84	0	2	91	62	1	72	0	740
Prairies	4	0	4	46	0	296	90	3	23	0	466
Taiga Cordillera	24	9	82	0	140	0	0	0	3	10	267
Boreal Cordillera	191	18	135	0	92	0	0	0	11	24	471
Pacific Maritime	89	3	47	0	14	1	0	2	14	39	209
Montane Cordillera	305	11	75	2	55	2	5	1	15	19	490
Hudson Plains	238	12	95	0	14	0	0	0	16	0	376

1. 'Disturbance' refers to forest disturbance, which can be caused by changes in forest structure or composition resulting from natural events such as fire, flood or wind; mortality caused by insect or disease outbreaks; or human-caused events such as forest harvesting.
2. These figures were estimated using Agriculture and Agri-Food Canada's National Ecological Framework 1:1,000,000 base.

Note(s): Figures may not add up to totals due to rounding.

Source(s): Agriculture and Agri-Food Canada and Environment Canada, 2005, *A National Ecological Framework for Canada*, *http://sis.agr.gc.ca/cansis/nsdb/ecostrat/gis_data.html* (accessed January 13, 2009). Latifovic, Rasim and Darren Pouliot, 2005, "Multi-temporal land cover mapping for Canada: Methodology and Products," *Canadian Journal of Remote Sensing*, Vol. 31, no. 5, pages 347 to 363. Statistics Canada, Environment Accounts and Statistics Division, 2010, special tabulation.

Table 1.2
Water resource characteristics, by drainage region

	Drainage region	Land and water area [1]	Water area			Precipitation [2]	
			Total	As a portion of total area	Share of national water area	Amount	Volume
	code	square kilometres		percent		millimetres per year	cubic kilometres per year
Canada		**9,978,923**	**1,169,561**	**11.7**	**100**	**545**	**5,451**
Pacific Coastal	1	334,455	14,219	4.3	1.2	1,354	451
Fraser–Lower Mainland	2	233,104	8,937	3.8	0.8	670	156
Okanagan–Similkameen	3	15,603	585	3.7	0.1	466	7
Columbia	4	87,323	2,348	2.7	0.2	776	68
Yukon	5	332,906	9,540	2.9	0.8	346	115
Peace–Athabasca	6	485,145	16,725	3.4	1.4	497	241
Lower Mackenzie	7	1,330,490	177,000	13.3	15.1	365	486
Arctic Coast–Islands	8	1,764,280	175,804	10.0	15.0	189	333
Missouri	9	27,096	915	3.4	0.1	390	11
North Saskatchewan	10	150,151	7,242	4.8	0.6	443	67
South Saskatchewan	11	177,623	6,219	3.5	0.5	419	74
Assiniboine–Red	12	190,704	8,846	4.6	0.8	450	86
Winnipeg	13	107,655	20,525	19.1	1.8	683	74
Lower Saskatchewan–Nelson	14	360,887	67,617	18.7	5.8	508	183
Churchill	15	313,568	51,918	16.6	4.4	480	151
Keewatin–Southern Baffin Island	16	939,569	161,011	17.1	13.8	330	310
Northern Ontario	17	691,809	56,064	8.1	4.8	674	466
Northern Quebec	18	940,193	149,081	15.9	12.7	698	656
Great Lakes	19	317,860	111,577	35.1	9.5	925	292
Ottawa	20	146,353	14,550	9.9	1.2	947	139
St. Lawrence	21	118,733	8,801	7.4	0.8	1,057	125
North Shore–Gaspé	22	369,095	36,933	10.0	3.2	994	367
Saint John–St. Croix	23	41,903	1,716	4.1	0.1	1,147	48
Maritime Coastal	24	122,057	6,495	5.3	0.6	1,251	153
Newfoundland–Labrador	25	380,361	54,893	14.4	4.7	1,030	392

1. These figures were estimated using the Atlas of Canada 1:1,000,000 scale hydrography base and include the Canadian portion of the Great Lakes. Water area figures are calculated from the Canada-wide 1-km Water Fraction derived from National Topographic Data Base maps.
2. Precipitation values have been estimated from an Inverse Distance Weighted interpolation of the 1971 to 2000 normals.

Source(s): Environment Canada, Meteorological Service of Canada, 2008, *Canadian Climate Normals and Averages 1971-2000*, *http://climate.weatheroffice.gc.ca/climate_normals/index_e.html* (accessed April 27, 2010). Fernandes, R., G. Pavlic, W. Chen, and R. Fraser, 2001,*1-km Water Fraction From National Topographic Data Base Maps, Canada*, Natural Resources Canada, Earth Science Sector, *www.geogratis.ca/geogratis/en/option/select.do?id=8C3D34AE-5BD5-A83C-DB8C-895FB4AD86C6* (accessed April 28, 2010). Statistics Canada, Standards Division, 2009, *Standard Drainage Area Classification (SDAC) 2003*, *www.statcan.gc.ca/subjects-sujets/standard-norme/sdac-ctad/sdac-ctad-eng.htm* (accessed February 22, 2011).

Table 1.3
Average annual water yield by drainage region, 1971 to 2004

	Drainage region	Water yield	
		Volume [1]	Volume per unit area
	code	cubic kilometres	cubic metres per square metre
Canada		**3,472.3**	**0.348**
Pacific Coastal	1	513.7	1.536
Fraser–Lower Mainland	2	128.6	0.552
Okanagan–Similkameen	3	4.2	0.270
Columbia	4	67.7	0.776
Yukon	5	106.0	0.318
Peace–Athabasca	6	99.9	0.206
Lower Mackenzie	7	246.3	0.185
Arctic Coast–Islands	8	231.3	0.131
Missouri	9	0.5	0.019
North Saskatchewan	10	10.2	0.068
South Saskatchewan	11	9.6	0.054
Assiniboine–Red	12	6.9	0.036
Winnipeg	13	25.4	0.236
Lower Saskatchewan–Nelson	14	47.6	0.132
Churchill	15	49.4	0.158
Keewatin–Southern Baffin Island	16	192.0	0.204
Northern Ontario	17	199.2	0.288
Northern Quebec	18	516.3	0.549
Great Lakes	19	133.1	0.419
Ottawa	20	62.6	0.428
St. Lawrence	21	71.3	0.600
North Shore–Gaspé	22	292.2	0.792
Saint John–St. Croix	23	29.2	0.697
Maritime Coastal	24	103.6	0.849
Newfoundland–Labrador	25	325.4	0.856

1. The water yield estimates are 34-year annual averages (1971 to 2004), with the exception of those estimates for drainage regions 5, 7, 16, 17, 18 and the Labrador portion of 25 which are based on 20 years of data (1975 to 1996); and drainage region 8 which is based on a 23-year annual average (1972-1994) for the Arctic Archipelago (Spence and Burke 2008), and on a 20-year annual average (1975 to 1996) for the remaining area.

Note(s): Data were derived from discharge values contained in Environment Canada, 2010, Water Survey of Canada, *Archived Hydrometric Data (HYDAT)* (*www.wsc.ec.gc.ca/applications/H2O/index-eng.cfm*).

Source(s): Spence C., and A. Burke, 2008, "Estimates of Canadian Arctic Archipelago Runoff from Observed Hydrometric Data," *Journal of Hydrology*, Vol. 362, pages 247 to 259. Statistics Canada, Environment Accounts and Statistics Division, 2010, special tabulation.

Table 1.4
Annual water yield for selected drainage regions and Southern Canada

	Drainage region and code													
	Southern Canada	Pacific Coastal (1)	Fraser–Lower Mainland (2)	Columbia (4)	Peace–Athabasca (6)	North Saskat-chewan (10)	South Saskat-chewan (11)	Assiniboine–Red (12)	Great Lakes (19)	Ottawa (20)	North Shore–Gaspé (22)	St. John–St.Croix (23)	Maritime Coastal (24)	Newfound-land (Island) (25)
	cubic kilometres													
1971	1,375.7	539.6	137.6	69.5	109.8	14.1	12.5	7.7	127.0	53.6	310.7	24.8	111.1	138.0
1972	1,467.7	563.7	153.6	80.9	121.1	13.5	12.6	6.7	132.2	75.1	290.8	34.3	129.6	138.5
1973	1,352.8	487.8	110.7	53.4	115.1	11.3	9.2	2.0	139.2	73.3	304.9	39.7	116.9	139.7
1974	1,543.5	568.2	147.5	76.8	127.4	21.1	15.3	17.6	137.4	78.1	330.1	30.5	105.7	120.8
1975	1,284.1	528.4	127.9	62.7	94.8	9.0	12.0	11.5	123.2	56.7	286.4	26.3	97.6	115.7
1976	1,506.5	615.8	166.6	79.9	115.4	7.9	10.3	16.5	117.4	66.8	336.1	37.4	115.1	127.2
1977	1,298.8	473.0	119.6	49.2	104.5	8.2	5.3	1.1	140.6	55.6	360.9	35.1	129.1	141.1
1978	1,181.1	448.4	116.7	69.7	89.2	11.0	10.0	3.9	115.5	53.7	298.6	23.9	84.5	111.7
1979	1,392.9	477.5	110.4	52.0	104.5	10.1	8.6	13.0	155.2	75.1	357.8	42.6	136.6	128.8
1980	1,324.6	561.4	124.8	63.1	83.3	11.0	8.7	2.3	121.5	62.7	328.1	27.4	102.1	145.2
1981	1,398.8	542.3	127.0	75.5	87.6	10.6	11.2	1.2	124.3	73.8	350.9	38.5	134.2	144.6
1982	1,323.3	468.9	140.1	75.3	96.1	10.9	9.4	5.8	155.4	54.9	317.3	27.7	99.7	134.5
1983	1,362.4	501.2	125.9	70.3	86.8	9.1	6.8	6.5	136.5	67.8	341.6	32.5	110.5	137.2
1984	1,349.0	503.2	127.5	65.1	98.7	7.8	5.3	1.9	144.4	67.6	304.7	33.6	108.4	138.9
1985	1,193.6	433.5	114.3	58.1	90.0	12.5	9.6	6.9	167.4	60.9	261.3	19.3	79.7	97.2
1986	1,327.0	518.3	125.4	67.7	100.8	13.0	10.7	7.0	139.6	62.9	273.9	26.9	94.7	111.4
1987	1,164.7	569.4	113.7	59.5	98.7	8.4	6.9	4.5	94.8	46.3	236.7	21.3	78.8	103.1
1988	1,304.9	535.1	113.5	62.6	96.2	6.8	5.7	2.2	137.9	68.1	286.6	24.4	107.6	130.9
1989	1,177.8	496.5	117.3	63.3	98.8	9.6	7.8	1.5	110.2	59.1	263.4	23.6	83.9	96.5
1990	1,399.6	517.0	135.7	77.7	105.4	13.3	11.7	3.7	151.3	68.2	255.6	36.8	120.6	133.0
1991	1,361.2	594.8	140.8	79.6	93.2	10.8	10.5	2.9	129.5	57.6	245.8	31.0	105.2	118.6
1992	1,326.5	585.7	119.0	59.2	91.4	8.0	7.6	5.2	155.4	62.5	271.5	25.6	87.0	113.8
1993	1,248.8	466.9	103.9	57.1	82.6	9.3	12.8	4.5	139.2	60.1	293.8	31.6	108.3	139.9
1994	1,293.4	503.7	119.1	62.8	99.0	9.9	9.8	6.5	125.2	57.9	297.1	29.2	109.0	133.4
1995	1,278.2	464.0	125.1	70.1	86.0	10.6	12.3	13.3	134.5	54.9	258.8	25.1	93.5	131.8
1996	1,437.4	457.3	133.9	78.2	136.0	10.2	12.2	13.4	184.5	69.5	288.7	35.0	117.2	122.6
1997	1,469.0	550.6	169.9	88.4	152.9	13.6	13.1	14.4	153.8	x	283.4	24.0	85.0	124.2
1998	1,196.0	441.8	111.9	61.7	76.4	8.9	9.7	6.3	98.7	x	267.9	30.4	113.0	137.5
1999	1,425.4	557.8	171.1	87.7	87.1	11.0	10.9	11.7	101.4	x	319.7	29.0	106.9	135.6
2000	1,228.2	455.1	129.1	70.2	91.8	7.8	6.8	4.5	109.8	x	272.4	26.9	95.5	132.4
2001	1,200.1	490.0	108.6	50.8	93.6	5.7	4.9	11.3	145.5	x	264.9	18.0	73.3	108.2
2002	1,260.0	517.1	138.4	73.4	93.2	6.1	9.3	3.0	117.8	x	239.4	26.0	97.4	119.1
2003	1,284.7	521.2	116.4	65.0	93.0	7.3	8.5	5.9	124.5	x	251.1	32.2	102.9	123.6
2004	1,344.8	511.3	128.4	66.5	97.4	7.6	8.2	7.0	133.5	x	282.8	22.8	81.9	136.2

Source(s): Statistics Canada, Environment Accounts and Statistics Division, 2011, special tabulation.

Table 1.5
Median monthly water yield for selected drainage regions, 1971 to 2004

	Drainage region	January	February	March	April	May	June	July	August	September	October	November	December
	code	cubic kilometres											
Pacific Coastal	1	28.39	18.83	19.14	24.76	55.01	79.28	65.60	43.30	42.84	49.75	41.89	34.11
Fraser–Lower Mainland	2	3.80	3.05	3.35	8.20	22.76	25.63	19.22	11.07	7.31	6.59	5.59	4.27
Okanagan–Similkameen	3	0.06	0.06	0.10	0.40	1.48	0.99	0.34	0.10	0.08	0.09	0.09	0.08
Columbia	4	1.02	0.88	1.28	3.67	12.31	17.29	11.91	6.98	3.64	2.51	1.97	1.28
Peace–Athabasca	6	1.48	1.17	1.32	6.74	18.79	23.76	17.25	8.68	5.81	5.51	2.97	1.95
Missouri	9	0.01	0.01	0.09	0.06	0.03	0.03	0.02	0.01	0.01	0.01	0.02	0.01
North Saskatchewan	10	0.12	0.11	0.30	1.14	1.07	1.63	1.84	1.22	0.71	0.42	0.21	0.15
South Saskatchewan	11	0.17	0.16	0.46	0.86	1.49	2.08	1.35	0.70	0.45	0.33	0.33	0.23
Assiniboine–Red	12	0.04	0.04	0.50	2.65	0.58	0.33	0.24	0.10	0.07	0.08	0.06	0.04
Great Lakes	19	7.13	6.21	14.50	28.95	19.97	8.50	4.96	3.43	4.66	9.20	10.11	9.50
Ottawa	20	2.81	2.15	4.52	13.82	12.35	4.79	2.89	1.99	1.92	2.81	4.50	4.10
St. Lawrence	21	2.83	1.86	5.43	15.68	12.76	5.31	3.46	2.90	2.99	4.65	5.31	4.28
North Shore–Gaspé	22	7.61	4.71	5.44	18.31	82.39	41.58	23.48	18.00	17.72	27.88	20.73	12.56
St. John–St.Croix	23	1.27	0.95	2.19	7.68	5.28	1.59	0.96	0.83	0.79	1.24	2.37	2.00
Maritime Coastal	24	7.19	5.17	8.81	19.10	18.54	6.16	3.51	3.08	2.96	5.31	8.72	9.75
Newfoundland (Island)	25	6.25	5.46	7.74	17.83	23.14	9.26	5.26	4.06	6.11	9.51	12.83	9.69

Source(s): Statistics Canada, Environment Accounts and Statistics Division, 2011, special tabulation.

Section 2

Climate

Climate can be defined as the average weather that occurs in a specific area over a period of time. Climate is measured using various weather elements as indicators. Two essential indicators, temperature and precipitation, are measured systematically at weather stations over time, accumulating observations from which climatic summaries can be derived. Table 2.1 lists some of the more extreme weather events that have recently had an impact on Canada.

2.1 Temperature

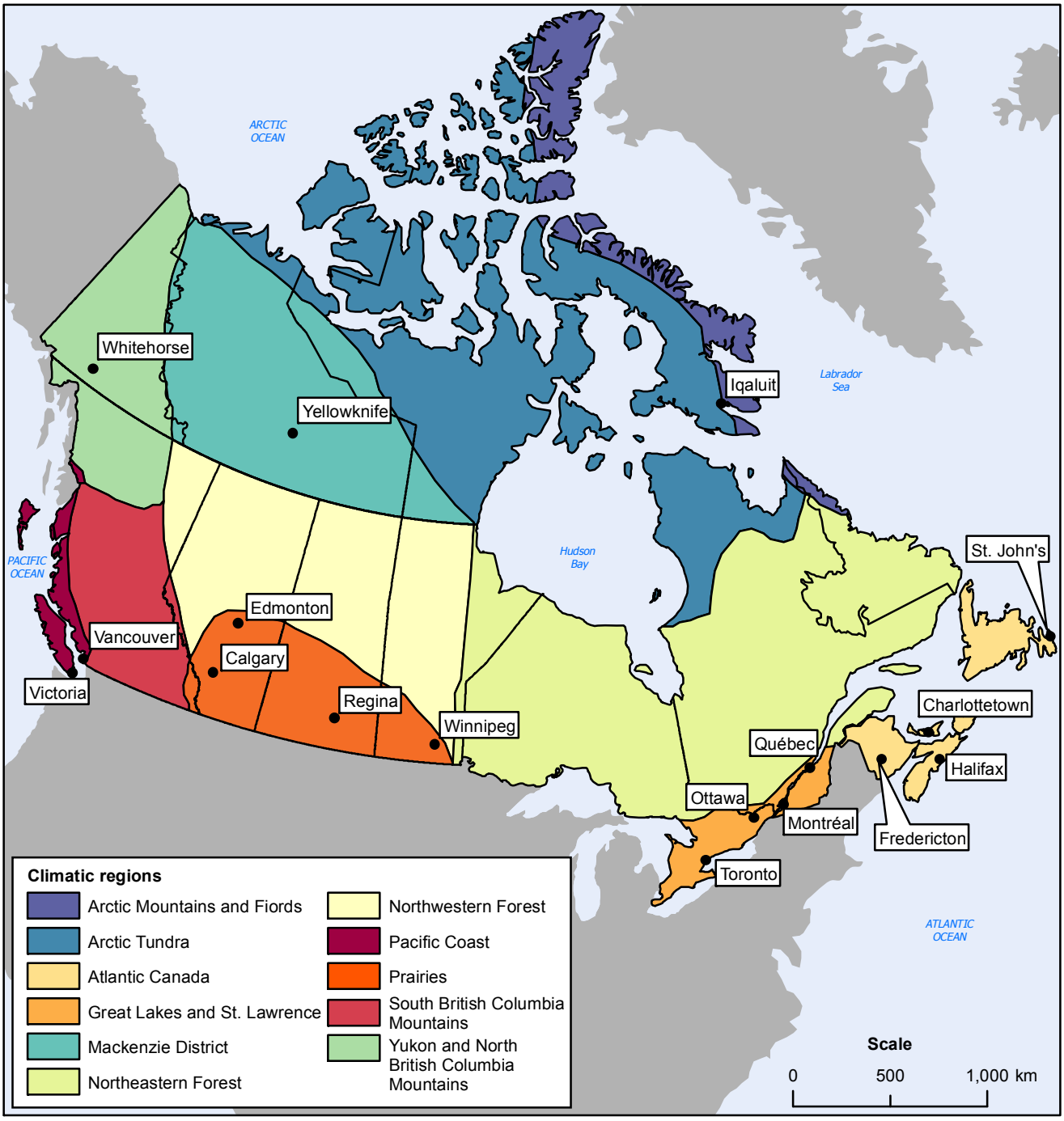
Table 2.2 summarizes the mean daily temperatures by month as recorded at selected weather stations across Canada and averaged over the period of 1971 to 2000. Table 2.3 presents temperature trends and departures for the climate regions shown in Map 2.1.

2.2 Precipitation

Some 5,000 km^3 of precipitation falls on Canada every year, mainly in the form of rain and snow.[1] Air masses that carry this precipitation generally circulate from west to east (Map 2.2). Table 2.4 shows the average annual precipitation as recorded at selected weather stations.

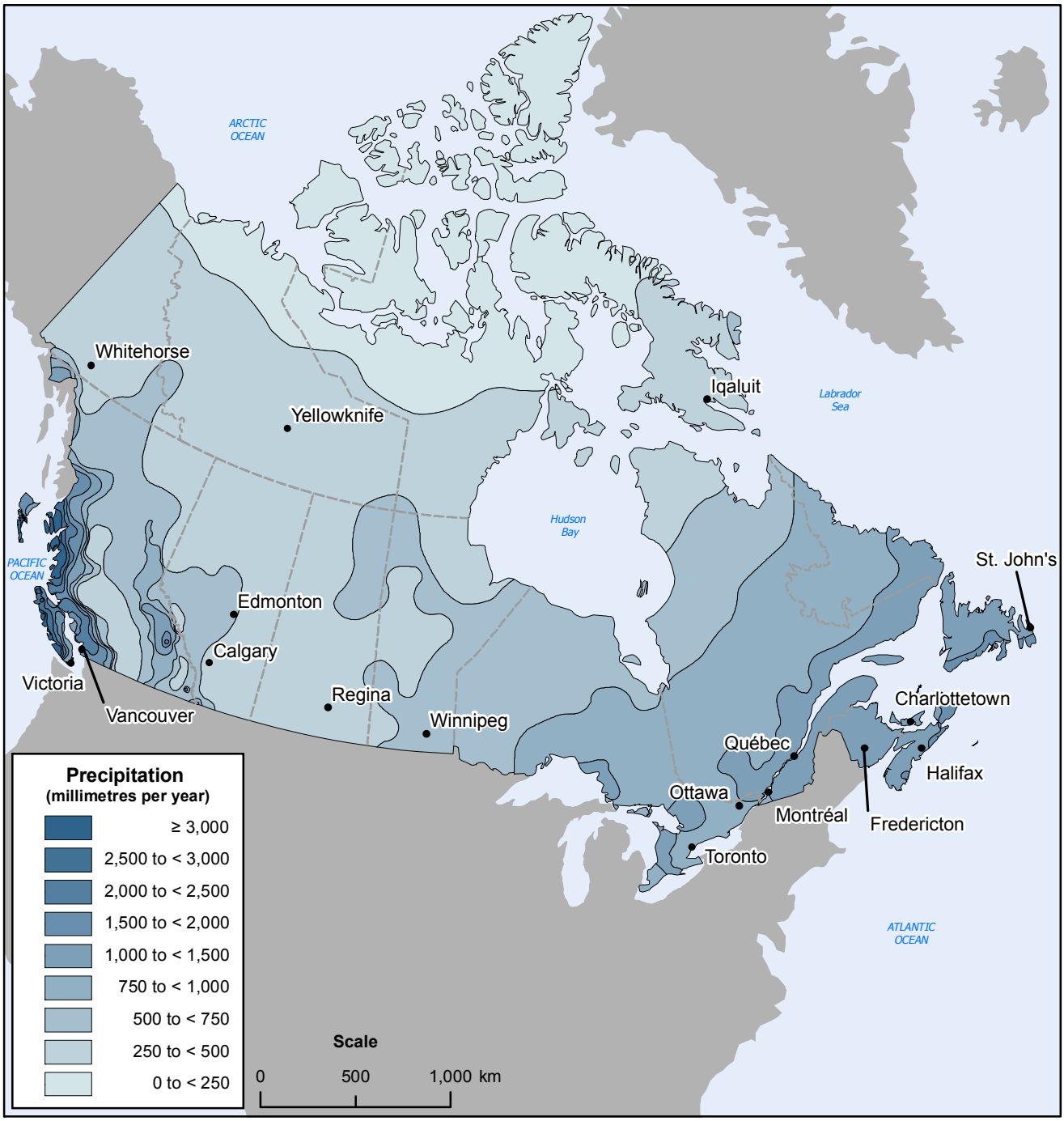
1. Statistics Canada, 2003, "Fresh Water Resources," *Human Activity and the Environment*, Catalogue no. 16-201-X.

Map 2.1
Canadian climatic regions



Source(s): Environment Canada, Atmospheric Environment Service, Climate Research Branch, 1998, *Climate Trends and Variations Bulletin for Canada*, Ottawa.

Map 2.2
Normal precipitation, 1971 to 2000



Note(s): The data for this map were estimated using a two-pass inverse distance-weighted interpolation of the 1971 to 2000 normal precipitation data from the Meteorological Service of Canada, using the Albers Equal Area Conic projection. For more information, see: Environment Canada, 2011, *Calculation of the 1971 to 2000 Climate Normals*, http://climate.weatheroffice.gc.ca/prods_servs/normals_documentation_e.html (accessed March 31, 2011).

Source(s): Environment Canada, Meteorological Service of Canada, 2003, special tabulation. Statistics Canada, Environment Accounts and Statistics Division, 2003, special tabulation.

Table 2.1
Top ten Canadian weather stories of 2010

	Event	Location	Time period	Rank[1]
Spring Weather for the Olympic Winter Games	Vancouver's mildest winter on record	Vancouver	Winter	1
Vigorous Igor	Hurricane	Eastern Canada	September	2
From Dry to Drenched on the Prairies	Drought followed by heavy rainfall	Prairies	April to September	3
Canada's a "Hottie"	Warmest year in 63 years	Various	All year	4
Storm for the Ages: "Flurries", Fury and Floods	Storm	Ontario, Quebec and Eastern Canada	December	5
Saskatchewan's Summer of Storms	Storms	Saskatchewan	Summer	6
British Columbia Forest Fires...Costly and Smoky	Forest fires	British Columbia	May and June	7
El Niño Cancels Winter	Warmest and driest winter in recorded history	Various	Winter	8
Freak Canada-U.S. "Weather Bomb"	Storm	Various	October	9
Canada's Most Expensive Hailstorm	Hailstorm	Calgary	July	10

1. Canada's Top Weather Stories for 2010 are rated from one to ten based on the degree to which Canada and Canadians were impacted, the extent of the area affected, economic effects and longevity as a top news story.

Source(s): Environment Canada, Meteorological Service of Canada, 2010, *Canada's Top Ten Weather Stories for 2010*, *www.ec.gc.ca/meteo-weather/default.asp?lang=En&n=424DD273-1* (accessed January 5, 2011).

Table 2.2
Average daily temperatures by month for selected weather stations, 1971 to 2000

	January	February	March	April	May	June	July	August	September	October	November	December	Annual
	average daily temperature in degrees Celsius												
Goose Bay, Newfoundland and Labrador	-18.1	-16.3	-9.6	-1.7	5.1	11.0	15.4	14.5	9.2	2.4	-4.5	-13.9	-0.5
Gander, Newfoundland and Labrador	-7.4	-7.9	-4.0	1.3	6.7	11.6	16.0	15.7	11.4	5.8	1.0	-4.3	3.8
St. John's, Newfoundland and Labrador	-4.8	-5.4	-2.5	1.6	6.2	10.9	15.4	15.5	11.8	6.9	2.6	-2.2	4.7
Charlottetown, Prince Edward Island	-8.0	-7.8	-3.1	2.7	9.1	14.6	18.5	18.1	13.6	7.8	2.3	-4.1	5.3
Sydney, Nova Scotia	-5.7	-6.5	-2.7	2.1	7.8	13.3	17.7	17.7	13.4	8.0	3.3	-2.1	5.5
Halifax, Nova Scotia	-6.0	-5.6	-1.4	4.0	9.8	15.0	18.6	18.4	14.1	8.3	3.1	-2.8	6.3
Yarmouth, Nova Scotia	-3.0	-3.0	0.3	4.9	9.7	13.7	16.5	16.9	13.8	9.1	4.8	-0.2	7.0
Moncton, New Brunswick	-8.9	-8.0	-2.9	3.2	9.9	15.1	18.6	17.9	13.0	7.1	1.4	-5.5	5.1
Saint John, New Brunswick	-8.1	-7.3	-2.5	3.6	9.4	14.0	17.1	16.9	12.8	7.3	2.0	-4.7	5.0
Chapais 2, Quebec	-18.8	-16.6	-9.5	-0.5	7.9	14.0	16.3	14.9	9.3	2.9	-5.4	-14.8	0.0
Kuujjuaq, Quebec	-24.3	-23.6	-18.3	-9.1	0.3	7.2	11.5	10.6	5.6	-0.7	-8.4	-19.3	-5.7
Kuujjuarapik, Quebec	-23.4	-23.2	-17.3	-7.6	1.3	7.0	10.6	11.4	7.4	2.1	-5.0	-16.2	-4.4
Québec, Quebec	-12.8	-11.1	-4.6	3.3	11.2	16.5	19.2	17.9	12.5	6.2	-0.7	-9.1	4.0
Sept-Îles, Quebec	-15.3	-13.4	-7.1	0.0	5.9	11.7	15.3	14.2	9.3	3.4	-3.1	-11.3	0.8
Montréal, Quebec	-10.4	-9.0	-2.5	5.5	12.9	17.7	20.5	19.2	13.9	7.5	1.0	-6.8	5.8
Ottawa, Ontario	-10.8	-8.7	-2.5	5.7	13.4	18.3	20.9	19.5	14.3	7.8	1.0	-7.1	6.0
Kapuskasing, Ontario	-18.7	-15.5	-8.6	0.5	9.0	14.4	17.2	15.7	10.1	3.8	-4.8	-14.3	0.7
Thunder Bay, Ontario	-14.8	-12.0	-5.5	2.9	9.5	14.0	17.6	16.6	11.0	5.0	-3.0	-11.6	2.5
Toronto, Ontario	-6.3	-5.4	-0.4	6.3	12.9	17.8	20.8	19.9	15.3	8.9	3.2	-2.9	7.5
Windsor, Ontario	-4.5	-3.2	2.0	8.2	14.9	20.1	22.7	21.6	17.4	11.0	4.6	-1.5	9.4
The Pas, Manitoba	-20.6	-16.1	-8.9	1.0	9.0	14.8	17.7	16.5	10.0	3.1	-7.8	-17.4	0.1
Winnipeg, Manitoba	-17.8	-13.6	-6.1	4.0	12.0	17.0	19.5	18.5	12.3	5.3	-5.3	-14.4	2.6
Churchill, Manitoba	-26.7	-24.6	-19.5	-9.7	-0.7	6.6	12.0	11.7	5.6	-1.7	-12.6	-22.8	-6.9
Regina, Saskatchewan	-16.2	-11.9	-5.0	4.5	11.7	16.4	18.8	18.0	11.7	4.8	-5.5	-13.2	2.8
Saskatoon, Saskatchewan	-17.0	-13.0	-5.8	4.4	11.5	16.0	18.2	17.3	11.2	4.5	-6.2	-14.3	2.2
Calgary, Alberta	-8.9	-6.1	-1.9	4.6	9.8	13.8	16.2	15.6	10.8	5.4	-3.1	-7.4	4.1
Edmonton, Alberta	-13.5	-10.5	-4.5	4.3	10.4	14.1	15.9	15.1	10.1	4.3	-5.7	-11.3	2.4
Victoria, British Columbia	3.8	4.9	6.4	8.8	11.8	14.4	16.4	16.4	14.0	9.8	6.1	4.0	9.7
Penticton, British Columbia	-1.7	0.7	4.7	9.0	13.6	17.4	20.4	20.1	14.9	8.7	3.1	-1.1	9.2
Vancouver, British Columbia	3.3	4.8	6.6	9.2	12.5	15.2	17.5	17.6	14.6	10.1	6.0	3.5	10.1
Prince Rupert, British Columbia	1.3	2.5	3.9	6.0	8.7	11.1	13.1	13.5	11.3	7.9	4.1	2.2	7.1
Prince George, British Columbia	-9.6	-5.4	-0.3	5.2	9.9	13.3	15.5	14.8	10.1	4.6	-2.9	-7.8	4.0
Mayo, Yukon Territory	-25.7	-19.0	-9.6	0.9	8.4	14.0	16.0	13.1	6.4	-2.9	-15.9	-22.3	-3.1
Whitehorse, Yukon Territory	-17.7	-13.7	-6.6	0.9	6.9	11.8	14.1	12.5	7.1	0.6	-9.4	-14.9	-0.7
Inuvik, Northwest Territories	-27.6	-26.9	-23.2	-12.8	0.2	11.3	14.2	11.0	3.7	-8.2	-21.0	-25.7	-8.8
Yellowknife, Northwest Territories	-26.8	-23.4	-17.3	-5.3	5.6	13.5	16.8	14.2	7.1	-1.7	-13.8	-23.7	-4.6
Resolute, Nunavut	-32.4	-33.1	-30.7	-22.8	-10.9	-0.1	4.3	1.5	-4.7	-14.9	-23.6	-29.2	-16.4
Alert, Nunavut	-32.4	-33.4	-32.4	-24.4	-11.8	-0.8	3.3	0.8	-9.2	-19.4	-26.4	-30.1	-18.0
Clyde, Nunavut	-28.1	-29.6	-27.2	-19.0	-8.5	0.7	4.4	3.9	0.0	-7.6	-17.5	-24.8	-12.8
Iqaluit, Nunavut	-26.6	-28.0	-23.7	-14.8	-4.4	3.6	7.7	6.8	2.2	-4.9	-12.8	-22.7	-9.8
Baker Lake, Nunavut	-32.3	-31.5	-27.2	-17.4	-5.8	4.9	11.4	9.5	2.6	-7.5	-20.1	-28.4	-11.8

Note(s): Averaged over the period 1971 to 2000.

Source(s): Environment Canada, 2010, *Canadian Climate Normals and Averages 1971-2000*, *www.climate.weatheroffice.ec.gc.ca/climate_normals/index_e.html* (accessed February 10, 2011).

Table 2.3
Annual regional temperature departures from climate normal, trends and extremes, 1948 to 2010

	Trend [1]	Extreme years				Annual 2010 [p]	
		Coldest		Warmest			
		Year on record	Departure [2]	Year on record	Departure [2]	Rank [3]	Departure [2]
	degrees Celsius	year	degrees Celsius	year	degrees Celsius	number	degrees Celsius
Canada [4]	**1.6**	**1972**	**-1.8**	**2010**	**3.0**	**1**	**3.0**
Atlantic Canada	0.5	1972	-1.4	2010	2.1	1	2.1
Great Lakes and St. Lawrence Lowlands	0.7	1978	-1.0	1998	2.3	2	1.9
Northeastern Forest	1.1	1972	-1.9	2010	3.1	1	3.1
Northwestern Forest	1.8	1950	-2.1	1987	3.0	4	2.2
Prairies	1.3	1950	-2.1	1987	3.1	23	0.8
South British Columbia Mountains	1.5	1955	-1.8	1998	2.0	9	1.3
Pacific Coast	1.1	1955	-1.2	1958	1.6	9	1.0
North British Columbia Mountains and Yukon	2.1	1972	-2.1	2005	2.8	5	2.4
Mackenzie District	2.3	1982	-1.5	1998	3.9	2	3.3
Arctic Tundra	2.0	1972	-2.4	2010	4.3	1	4.3
Arctic Mountains and Fiords	1.6	1972	-1.9	2010	4.2	1	4.2

1. A linear (least square) trend over the period between 1948 and 2010.
2. Difference from the normal temperature.
3. This column ranks 2010 temperature departures over the period between 1948 and 2010. For example, the Atlantic Canada Climate Region had a departure that was 2.1°C warmer than the long term temperature average, which ranked the 2010 season as the warmest over the 63 year period.
4. The climate regions of Canada are illustrated in Map 2.1.

Source(s): Environment Canada, Meteorological Service of Canada, Climate Research Branch, 2011, *Climate Trends and Variations Bulletin for Canada, Annual 2010*, *www.ec.gc.ca/adsc-cmda/default.asp?lang=en&n=B49D9F0B-1&printfullpage=true&nodash=1*(accessed January 12, 2011).

Table 2.4
Average precipitation by month for selected weather stations, 1971 to 2000

	January	February	March	April	May	June	July	August	September	October	November	December	Annual
	millimetres												
Goose Bay, Newfoundland and Labrador	64.6	55.1	69.6	65.4	66.2	95.8	113.8	98.8	95.2	80.1	75.6	69.0	949.0
Gander, Newfoundland and Labrador	111.5	98.0	110.4	95.4	86.3	85.2	83.9	96.4	101.9	112.4	106.7	113.8	1,201.9
St. John's, Newfoundland and Labrador	150.0	125.2	130.8	121.8	100.9	101.9	89.4	108.1	130.9	161.9	144.0	148.8	1,513.7
Charlottetown, Prince Edward Island	106.4	85.5	91.8	87.8	97.7	93.2	85.8	87.3	95.4	108.6	110.8	123.1	1,173.3
Sydney, Nova Scotia	151.5	132.1	138.9	130.4	102.9	92.6	86.8	93.1	113.4	146.0	149.7	167.5	1,504.9
Halifax, Nova Scotia	149.2	114.4	134.5	118.3	109.7	98.3	102.2	92.7	103.6	128.7	146.0	154.8	1,452.2
Yarmouth, Nova Scotia	136.1	100.8	113.5	98.9	98.5	94.2	84.5	74.4	99.1	109.6	129.9	134.7	1,274.1
Moncton, New Brunswick	119.2	92.9	123.6	99.3	97.1	91.5	103.3	79.5	92.7	103.8	104.5	115.8	1,223.2
Saint John, New Brunswick	139.4	94.0	117.9	104.2	117.5	100.9	101.5	89.6	117.4	124.8	133.7	149.4	1,390.3
Chapais 2, Quebec	60.9	38.7	49.4	55.4	77.5	95.9	120.7	105.3	125.0	89.1	83.4	60.1	961.3
Kuujjuaq, Quebec	33.2	28.4	30.7	27.3	29.6	51.5	59.2	70.4	62.1	51.9	46.6	36.0	526.8
Kuujjuarapik, Quebec	27.6	22.2	20.5	23.6	35.1	60.0	79.4	91.5	102.7	80.9	64.3	40.8	648.5
Sept-Îles, Quebec	87.4	67.2	88.8	102.8	94.0	99.3	99.8	91.1	113.2	106.5	97.7	108.1	1,156.0
Montréal, Quebec	79.8	65.4	75.5	86.0	82.2	86.0	98.1	90.6	98.0	88.5	103.0	93.2	1,046.2
Ottawa, Ontario	70.2	58.9	73.9	72.4	79.0	85.0	90.6	87.1	85.3	79.4	80.1	81.5	943.5
Kapuskasing, Ontario	54.6	35.3	53.6	53.9	66.3	86.8	100.5	80.3	96.3	81.2	69.2	53.7	831.8
Thunder Bay, Ontario	31.3	24.9	41.6	41.5	66.5	85.7	89.0	87.5	88.0	62.6	55.6	37.5	711.6
Toronto, Ontario	52.2	42.6	57.1	68.4	72.5	74.2	74.4	79.6	77.5	64.1	69.3	60.9	792.7
Windsor, Ontario	57.6	57.3	75.0	85.1	80.8	89.8	81.8	79.7	96.2	64.9	75.5	74.7	918.3
The Pas, Manitoba	16.1	13.4	19.2	25.9	36.3	67.6	64.8	62.5	55.4	40.3	23.0	18.3	442.8
Winnipeg, Manitoba	19.7	14.9	21.5	31.9	58.8	89.5	70.6	75.1	52.3	36.0	25.0	18.5	513.7
Churchill, Manitoba	16.9	15.7	16.1	19.0	31.9	44.3	56.0	68.3	63.4	46.9	33.1	20.0	431.6
Regina, Saskatchewan	14.9	11.6	19.0	23.5	52.8	75.1	64.4	43.2	32.6	21.8	12.9	16.4	388.1
Saskatoon, Saskatchewan	15.2	10.3	14.7	23.9	49.4	61.1	60.1	38.8	30.7	16.7	13.3	15.9	350.0
Calgary, Alberta	11.6	8.8	17.4	23.9	60.3	79.8	67.9	58.8	45.7	13.9	12.3	12.2	412.6
Edmonton, Alberta	22.7	13.0	16.0	26.3	49.9	87.4	95.2	70.3	47.1	19.8	17.7	17.3	482.7
Victoria, British Columbia	136.6	107.8	78.0	44.5	36.5	32.0	19.5	23.9	30.4	75.7	147.2	151.2	883.3
Penticton, British Columbia	26.8	22.5	22.3	26.6	37.3	38.9	27.9	30.7	24.7	19.7	27.1	28.4	332.7
Vancouver, British Columbia	153.6	123.1	114.3	84.0	67.9	54.8	39.6	39.1	53.5	112.6	181.0	175.7	1,199.0
Prince Rupert, British Columbia	256.9	203.9	191.6	178.7	139.5	123.7	114.3	155.4	244.0	379.2	304.4	302.0	2,593.6
Prince George, British Columbia	52.4	31.4	32.7	32.2	50.9	72.7	63.5	51.1	52.5	57.9	51.5	52.0	600.8
Mayo, Yukon	16.6	13.5	10.0	9.2	23.5	40.5	54.4	41.8	36.6	29.5	19.2	18.1	312.9
Whitehorse, Yukon	16.7	11.4	10.4	7.0	15.2	30.3	41.4	39.4	34.1	23.8	19.2	18.5	267.4
Inuvik, Northwest Territories	13.8	11.6	11.0	10.5	17.0	22.1	33.2	39.9	28.0	28.0	17.8	15.7	248.4
Yellowknife, Northwest Territories	14.1	12.9	13.4	10.8	19.1	26.9	35.0	40.9	32.9	35.0	23.5	16.3	280.7
Resolute, Nunavut	4.3	3.4	6.5	6.1	9.5	14.7	20.2	34.3	25.0	13.8	7.6	4.7	150.0
Alert, Nunavut	6.8	6.3	7.0	10.3	11.0	11.1	27.8	21.2	23.4	12.3	9.7	6.8	153.8
Clyde, Nunavut	8.8	6.3	7.4	15.6	17.7	16.5	22.3	31.4	33.0	37.7	22.9	13.5	233.0
Iqaluit, Nunavut	21.1	15.0	21.8	28.2	26.9	35.0	59.4	65.7	55.0	36.7	29.1	18.2	412.0
Baker Lake, Nunavut	7.5	7.2	10.5	13.6	15.6	24.1	41.8	47.0	44.1	32.1	17.0	10.2	270.4

Source(s): Environment Canada, 2010, *Canadian Climate Normals and Averages 1971-2000*, *www.climate.weatheroffice.ec.gc.ca/climate_normals/index_e.html* (accessed January 12, 2011).

Section 3

Ecosystems

This section focuses on the impacts human activities have on air, land, water and wildlife.

3.1 Air

The atmosphere, an envelope of gases surrounding the Earth, is made up of nitrogen (78%), oxygen (21%), argon (0.9%) and other gases. The atmosphere provides the air we breathe, shields us from ultraviolet radiation, affects air circulation and weather patterns and ultimately keeps the Earth warm.

Traffic emissions affect urban air quality; industrial emissions of sulphur oxides and nitrogen oxides can lead to acid rain; chlorofluorocarbons, hydrochlorofluorocarbons and other substances deplete the ozone layer; and carbon dioxide, methane and nitrous oxide contribute to climate change. Air pollutants have a negative impact on the air we breathe and also have an effect on soil and water systems through acid deposition and other means. Effects can be local or global, as pollution travels with prevailing winds. One way of measuring air pollution is through criteria air contaminants, or those for which ambient air quality standards have been established by government.

The National Pollutant Release Inventory (NPRI) Database measures the volume of pollutants released on-site by over 8,000 industrial facilities. Table 3.1 presents the top ten substances released to air. Table 3.2 breaks down criteria air contaminant emissions by source.

Greenhouse gases (GHGs) help regulate the planet's climate by trapping solar energy as it radiates back from the Earth. Emissions of GHGs from human activities over the past 200 years have amplified this natural process and could impact global climate conditions. While criteria air contaminants persist in the environment for a relatively short time (from less than a day to a few weeks), the effects of GHGs may not be realized for much longer periods of time. Table 3.3 compares emissions of common GHGs: carbon dioxide, methane and nitrous oxide, by source

Table 3.4 shows direct energy use and greenhouse gas emissions, by sector. Table group 3.5 shows energy intensity, measured as gigajoules per thousand dollars of production, and GHG intensity measured as tonnes of carbon dioxide equivalent per thousand dollars of production, for 117 industries in Canada. In Table group 3.6 energy intensity and GHG intensity are indexed to 1990 and data are presented for the same 117 industries.

3.2 Land

Canada is the second largest country in the world, with almost 10 million km^2 of land and water. This land supports many uses, from agriculture and forestry to space for settlements, parks and recreation.

Table 3.7 shows the distribution of forest land by province and territory. Table 3.8 presents the area of forest harvested, while Table 3.9 shows the area of timber-productive forest land burned.

Natural nutrients on agricultural land are often supplemented by fertilizers and animal manures that supply additional nitrogen, phosphorus and potassium and other nutrients that are essential for plant growth. The application of manure also adds needed organic matter to soil. Care must be taken to ensure that fertilizers and manure are applied correctly, in a way that minimizes the risk of runoff. Table 3.10 shows fertilized area while Table 3.11 shows manure production.

Pesticides, including herbicides, insecticides and fungicides are used to control weeds, insects and crop diseases. The risk to the environment is determined by the mobility, persistence and toxicity of the pesticide to organisms other than its target. The area of farmland treated with herbicides and insecticides is illustrated in Tables 3.12 and 3.13.

The top ten substances released to land according to the NPRI are presented in Table 3.14.

3.3 Water

Canada has one of the largest renewable water supplies in the world. Water is used for power generation, transportation, recreation, irrigation, manufacturing, agriculture and drinking water. We also use our rivers, lakes and marine areas to dispose of municipal wastewater and wastes from industry. Some activities for which water is used can make it unfit for use by humans or wildlife.

Table 3.15 shows renewable freshwater yield per capita by drainage region while Map 3.1 illustrates the proportion of renewable fresh water that is used by Canadians within each of Canada's major drainage regions. Table 3.16 outlines water use by sector.

Drinking water plants treat water that is supplied to commercial, institutional, industrial and residential users. Tables 3.17 and 3.18 illustrate the population served by drinking water plants while Tables 3.19 and 3.20 illustrate the raw water volumes processed.

The top ten substances released to water according to the NPRI are shown in Table 3.21.

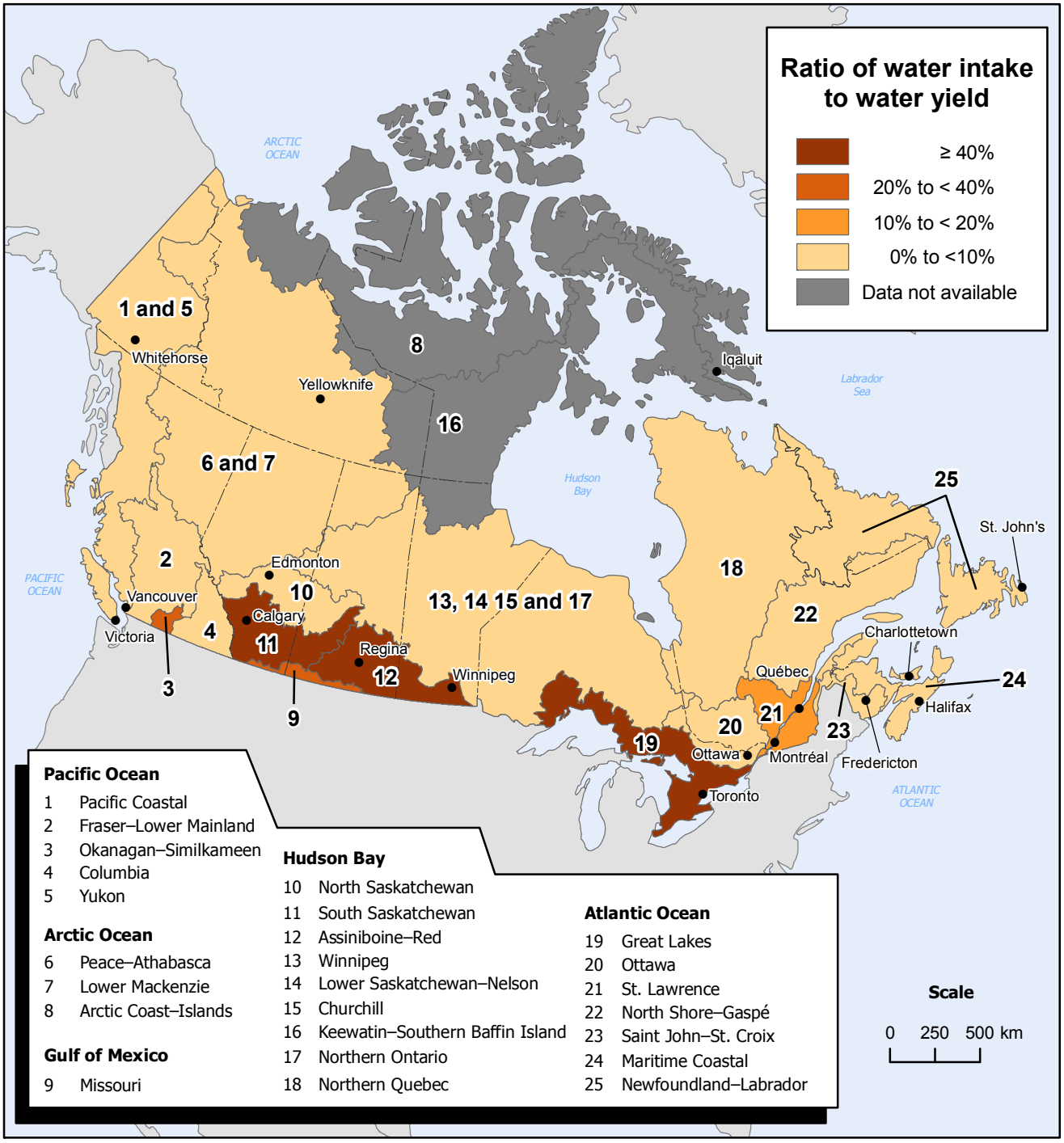
3.4 Wildlife

The general population status of Canada's wildlife species is outlined in Table 3.22. Table 3.23 outlines the number of wildlife species extinct and at risk in Canada. The legal protection of wildlife species in Canada under the *Species at Risk Act* is summarized in Table 3.24. Table 3.25 lists extinct and extirpated species in Canada, including date of extinction or extirpation and the probable cause(s).

Wildlife hunting and trapping are carried out widely in Canada. Table 3.26 shows harvest estimates for selected waterfowl species. Some high value, fur-bearing animal species are raised on farms for harvest. Tables 3.27 and 3.28 show the number and value of pelts harvested in the wild and raised on farms.

Map 3.1

Ratio of August 2005 water intake to the August median water yield for 1971 to 2004



Note(s): The following drainage regions were aggregated to protect confidentiality; Pacific Coastal (1) with the Yukon (5); Peace-Athabasca (6) with the Lower Mackenzie (7); and the Winnipeg (13), Lower Saskatchewan-Nelson (14), Churchill (15) and Northern Ontario (17). Data that contributed to intake volumes (demand) were compiled from Statistics Canada: Industrial Water Survey, 2005; Households and the Environment Survey, 2006; Survey of Drinking Water Plants, 2005 to 2007; and Agricultural Water Use Survey 2007. Data from Agriculture and Agri-Food Canada and Canada Mortgage and Housing Corporation were used to help allocate and derive some intake volumes. Water yield volumes (supply) used for each drainage region are a 34-year median (1971 to 2004) for the month of August.

Source(s): Canada Mortgage and Housing Corporation, 2007, *Household Guide to Water Efficiency*, Product number 61924.
Statistics Canada, Environment Accounts and Statistics Division, 2010, special tabulation.

Table 3.1
Top ten substances released to air, 2009

	Releases	Share of total
	tonnes	percent
Sulphur dioxide	1,308,230.2	37.2
Carbon monoxide	866,723.7	24.6
Oxides of nitrogen (expressed as NO_2)	698,014.7	19.8
Volatile organic compounds (VOCs)	243,922.7	6.9
Total particulate matter (TPM)	161,364.8	4.6
Ammonia (total) [1]	18,942.8	0.5
Total Reduced Sulphur (TRS)	16,256.3	0.5
Methanol	11,780.4	0.3
Carbonyl sulphide	6,976.8	0.2
Hydrochloric acid	6,390.4	0.2

1. Refers to the total of both ammonia (NH_3) and ammonium ion (NH_4+) in solution.

Source(s): Environment Canada, Pollution Data Branch, 2010, *National Pollutant Release Inventory (NPRI) Downloadable Datasets*, *www.ec.gc.ca/inrp-npri/default.asp?lang=en&n=0EC58C98-* (accessed December 21, 2010).

Table 3.2
Criteria air contaminant emissions, 2008

	Particulate matter			SO_x [4]	NO_x [5]	VOC [6]	CO
	Total [1]	PM_{10} [2]	$PM_{2.5}$ [3]				
	tonnes						
Total	**19,042,642.6**	**6,236,256.7**	**1,292,877.2**	**1,733,959.3**	**2,326,419.1**	**26,360,720.4**	**11,081,942.3**
Industrial sources	**446,805.3**	**156,853.3**	**77,079.7**	**1,160,440.4**	**664,752.9**	**644,062.9**	**1,483,320.8**
Abrasives manufacture	16.6	13.9	5.6	0.0		31.4	4.8
Aluminum industry	11,043.1	7,076.4	5,673.1	68,189.9	2,058.2	1,578.6	384,014.2
Asbestos industry	80.7	27.7	10.7	173.7	69.9		34.2
Asphalt paving industry	41,107.1	8,224.8	1,624.4	927.0	1,223.4	4,563.2	4,631.2
Bakeries	3.1	3.1	2.7			8,538.2	
Cement and concrete industry	51,975.7	17,659.1	8,372.9	31,303.4	38,007.6	301.7	17,168.4
Chemicals industry	4,177.7	2,753.6	1,325.6	13,622.7	19,119.6	12,867.8	14,951.1
Mineral products industry	1,140.1	835.5	598.8	932.9	422.0	225.0	3,662.8
Foundries	6,530.4	6,119.9	5,562.3	94.8	154.5	572.6	52,508.9
Grain industries	54,000.0	14,939.1	3,902.0	212.9	1,151.0	2,264.9	345.3
Iron and steel industries	6,621.8	3,626.1	2,593.5	26,975.9	12,736.1	1,126.4	35,561.9
Iron ore mining industry	12,468.1	4,834.3	1,494.8	18,299.6	14,560.7	59.5	23,204.3
Mining and rock quarrying	180,249.9	38,732.1	11,911.5	4,903.4	15,450.8	2,466.6	8,882.7
Non-ferrous smelting and refining industry	6,654.1	4,284.6	2,235.6	570,302.5	3,504.6	66.9	15,333.0
Pulp and paper industry	23,722.8	17,224.2	12,303.7	41,082.1	33,947.6	15,853.1	65,837.8
Wood industry	19,700.9	9,846.5	5,005.0	2,250.7	11,576.8	60,878.0	337,799.0
Upstream petroleum industry	16,097.0	12,505.0	8,977.1	293,382.8	444,277.4	438,969.1	472,583.5
Downstream petroleum industry	5,379.5	4,068.9	2,628.3	79,327.5	28,095.7	45,423.6	22,548.5
Petroleum product transportation and distribution	165.2	161.0	161.0	1,426.6	29,933.5	331.3	16,764.6
Other industries	5,671.5	3,917.3	2,691.3	7,032.0	8,463.7	47,944.9	7,484.6
Non-industrial fuel combustion	**144,662.8**	**125,020.8**	**118,421.3**	**476,966.3**	**302,730.9**	**158,365.6**	**764,245.5**
Commercial fuel combustion	4,872.8	3,321.1	2,419.6	35,081.0	29,793.9	1,211.9	15,895.0
Electric power generation (utilities)	23,787.5	12,296.2	6,927.7	430,612.1	227,186.9	1,797.3	36,166.1
Residential fuel combustion	3,414.6	2,805.1	2,605.4	9,790.7	35,372.5	1,807.7	13,480.8
Residential fuel wood combustion	112,587.9	106,598.5	106,468.6	1,482.5	10,377.5	153,548.8	698,703.7
Transportation	**69,839.1**	**69,314.2**	**62,262.4**	**93,285.4**	**1,165,046.0**	**529,979.9**	**6,746,884.1**
Air transportation	1,074.3	1,074.3	1,048.6	5,069.2	72,791.1	11,470.4	63,530.4
Heavy-duty diesel vehicles	5,282.0	5,282.0	4,862.5	557.7	223,628.2	8,966.6	49,071.8
Heavy-duty gasoline trucks	325.5	316.0	266.8	83.3	22,478.4	7,969.0	121,941.9
Light-duty diesel trucks	368.4	368.4	339.1	38.6	4,215.7	1,900.5	3,416.2
Light-duty diesel vehicles	112.5	112.5	103.5	8.5	1,115.4	381.0	1,614.6
Light-duty gasoline trucks	648.2	629.4	526.7	696.7	101,123.2	105,689.2	1,933,678.1
Light-duty gasoline vehicles	516.9	501.8	459.9	649.6	87,920.8	105,556.8	1,810,017.4
Marine transportation	10,858.8	10,437.3	9,571.1	81,041.3	117,115.8	3,859.3	9,777.3
Motor cycles	25.2	24.5	17.0	3.2	1,458.2	3,480.5	20,072.9
Off-road use of diesel	32,798.3	32,798.3	31,681.8	2,798.6	389,585.6	37,338.4	205,569.6
Off-road use of gasoline/LPG/CNG	8,629.2	8,629.2	7,954.0	103.8	40,050.2	240,509.2	2,512,145.1
Rail transportation	3,928.3	3,928.3	3,614.0	2,234.9	103,563.5	2,859.1	16,048.7
Tire wear and brake lining	5,271.4	5,212.2	1,817.5				
Incineration	**1,055.3**	**536.9**	**460.3**	**2,078.7**	**2,139.9**	**1,341.1**	**4,857.7**
Crematorium	5.9	5.9	5.9	8.4	47.5	2.0	21.7
Industrial and commercial incineration	112.5	57.3	23.5	499.8	654.9	633.3	1,887.3
Municipal incineration	653.1	448.6	414.0	349.9	1,139.3	598.8	1,516.8
Other incineration and utilities	233.8	25.1	16.9	1,220.6	298.3	107.0	1,432.0

See notes at the end of the table.

Table 3.2 – continued

Criteria air contaminant emissions, 2008

	Particulate matter			SO_x [4]	NO_x [5]	VOC [6]	CO
	Total [1]	PM_{10} [2]	$PM_{2.5}$ [3]				
	tonnes						
Miscellaneous	**9,820.9**	**9,592.6**	**9,493.6**	**0.0**	**34.4**	**446,756.2**	**3,803.5**
Cigarette smoking	496.0	496.0	496.0			8.3	2,346.8
Dry cleaning	1.6	1.6	1.5			283.7	
General solvent use						253,539.1	
Marine cargo handling industry	343.4	116.2	38.5				
Meat cooking	8,702.8	8,702.8	8,702.8				
Refined petroleum products retail						71,713.3	
Printing	16.0	15.0	13.0	0.0	34.4	43,549.2	6.2
Structural fires	261.1	261.1	241.8			265.9	1,450.5
Surface coatings						77,396.7	
Open sources	**18,120,974.4**	**5,662,833.9**	**850,485.6**	**1,041.2**	**6,270.2**	**330,515.6**	**23,838.9**
Agriculture	2,190,511.9	1,120,764.6	60,404.7			312,897.9	
Construction operations	3,685,768.4	1,100,421.6	218,011.9	660.6	2,079.6	23.6	341.6
Dust from paved roads	3,379,340.4	647,707.9	154,961.1				
Dust from unpaved roads	8,825,095.0	2,787,405.4	413,155.0				
Waste	5,718.5	2,554.3	2,353.7	376.3	3,985.9	17,019.9	13,674.7
Mine tailings	32,966.0	2,637.3	659.3				
Prescribed burning	1,574.3	1,342.8	940.0	4.2	204.6	574.1	9,822.5
Natural sources	**249,534.7**	**212,105.0**	**174,674.3**	**147.2**	**185,444.9**	**24,249,699.2**	**2,054,991.9**

1. Total particulate matter is made up of solid and liquid particles under 100 micrometres in diameter that are released into the atmosphere.
2. PM_{10} is the fraction of total particulate matter that is less than or equal to 10 micrometres in diameter.
3. $PM_{2.5}$ is the fraction of total particulate matter that is less than or equal to 2.5 micrometres in diameter.
4. SO_x is made up of gaseous oxides of sulphur, mainly sulphur dioxide (SO_2). In some cases, emissions may contain small amounts of sulphur trioxide (SO_3) and sulphurous and sulphuric acid vapour.
5. NO_x is made up of gaseous nitric oxide (NO) and nitrogen dioxide (NO_2).
6. Volatile organic compounds (VOCs) are made up of photochemically reactive hydrocarbon compounds (those that participate in chemical reactions when exposed to sunlight). They are major contributors to smog in urban areas.

Note(s): Figures may not add up to totals due to rounding. A blank space indicates that no emissions data is available or applicable.
Source(s): Environment Canada, Pollution Data Branch, 2010, *2008 Air Pollutant Emission Summaries and Historical Emission Trends*, *www.ec.gc.ca/inrp-npri/default.asp?lang=En&n=2C64C4DA-1* (accessed December 6, 2010).

Table 3.3
Greenhouse gas (GHG) emissions by source and sink category

	Carbon dioxide (CO_2)		Methane (CH_4)		Nitrous oxide (N_2O)		CO_2 equivalents [1]		
	1990	2008	1990	2008	1990	2008	1990	2008	Change 1990 to 2008
	kilotonnes								percent
Total [2]	**456,000**	**574,000**	**3,500.00**	**4700.00**	**160.00**	**170.00**	**592,000**	**734,000**	**24.0**
Energy	**424,000**	**535,000**	**1,700.00**	**2500.00**	**30.00**	**30.00**	**469,000**	**597,000**	**27.3**
Stationary combustion sources	**276,000**	**328,000**	**200.00**	**200.00**	**7.00**	**8.00**	**281,000**	**335,000**	**19.2**
Electricity and heat generation	94,900	118,000	1.80	4.60	2.00	2.00	95,500	119,000	24.6
Fossil fuel industries	49,400	65,300	80.00	100.00	1.00	1.00	51,000	68,000	33.3
Petroleum refining and upgrading	16,000	16,000	...	...	0.30	0.40	16,000	16,000	0.0
Fossil fuel production	33,800	49,100	80.00	100.00	0.70	1.00	36,000	52,000	44.4
Mining and oil and gas extraction	6,150	23,700	0.10	0.50	0.10	0.50	6,190	23,900	286.1
Manufacturing industries	54,500	42,900	3.00	3.00	2.00	1.00	55,000	43,400	-21.1
Iron and steel	6,420	6,110	0.20	0.20	0.20	0.20	6,480	6,170	-4.8
Non ferrous metals	3,170	3,470	0.07	0.08	0.05	0.05	3,190	3,480	9.1
Chemical	7,100	6,650	0.15	0.14	0.10	0.10	7,140	6,690	-6.3
Pulp and paper	13,500	4,280	2.00	2.00	0.80	0.70	13,700	4,540	-66.9
Cement	3,820	4,270	0.07	0.08	0.04	0.03	3,830	4,280	11.7
Other manufacturing	20,500	18,100	0.40	0.40	0.40	0.40	20,600	18,200	-11.7
Construction	1,850	1,250	0.03	0.02	0.05	0.03	1,870	1,260	-32.6
Commercial and institutional	25,500	34,600	0.50	0.60	0.50	0.70	25,700	34,900	35.8
Residential	40,900	40,400	100.00	90.00	2.00	2.00	43,000	43,000	0.0
Agriculture and forestry	2,370	2,150	0.04	0.04	0.05	0.06	2,390	2,170	-9.2
Transport [3]	**138,000**	**190,000**	**30.00**	**30.00**	**20.00**	**30.00**	**145,000**	**198,000**	**36.6**
Domestic aviation	6,180	8,300	0.50	0.50	0.60	0.80	6,400	8,500	32.8
Road transportation	94,900	132,000	15.00	9.20	10.00	10.00	98,400	135,000	37.2
Light-duty gasoline vehicles	43,800	39,600	7.80	2.90	6.20	3.20	45,800	40,600	-11.4
Light-duty gasoline trucks	19,600	43,200	3.10	3.20	3.20	5.00	20,700	44,800	116.4
Heavy-duty gasoline vehicles	7,720	6,500	1.30	0.34	0.22	0.49	7,810	6,660	-14.7
Motorcycles	143	259	0.14	0.17	0.00	0.01	146	264	80.8
Light-duty diesel vehicles	347	435	0.01	0.01	0.03	0.04	355	446	25.6
Light-duty diesel trucks	691	2,310	0.02	0.06	0.05	0.20	707	2,370	235.2
Heavy-duty diesel vehicles	20,500	39,000	1.00	2.00	0.60	1.00	20,700	39,400	90.3
Propane and natural gas vehicles	2,170	857	1.00	0.80	0.04	0.02	2,200	880	-60.0
Railways	6,160	6,290	0.30	0.30	3.00	3.00	7,000	7,000	0.0
Domestic marine	4,690	5,500	0.30	0.40	1.00	1.00	5,000	5,800	16.0
Other Transportation	26,000	38,000	20.00	20.00	6.00	10.00	29,000	41,000	41.4
Off-road gasoline	6,500	6,100	8.00	7.00	0.10	0.10	6,700	6,300	-6.0
Off-road diesel	13,000	25,000	0.70	1.00	6.00	10.00	15,000	28,000	86.7
Pipelines	6,650	7,240	6.70	7.30	0.20	0.20	6,850	7,460	8.9
Fugitive sources	**11,000**	**16,000**	**1,500.00**	**2,300.00**	**0.10**	**0.10**	**42,700**	**63,800**	**49.4**
Coal mining	...	...	90.00	40.00	...	...	2,000	800	-60.0
Oil and natural gas	10,600	16,200	1,440.00	2,230.00	0.10	0.10	40,700	63,100	55.0
Oil	95	210	193.00	252.00	0.10	0.10	4,180	5,520	32.1
Natural gas	23	68	613.00	1010.00	...	...	12,900	21,300	65.1
Venting	6,090	10,600	627.00	962.00	...	0.01	19,300	30,800	59.6
Flaring	4,400	5,400	2.60	3.70	0.00	0.01	4,400	5,500	25.0
Industrial processes	**31,000**	**39,000**	**...**	**...**	**37.80**	**11.70**	**54,800**	**52,600**	**-4.0**
Mineral products	**8,300**	**8,500**	**...**	**...**	**...**	**...**	**8,300**	**8,500**	**2.4**
Cement production	5,400	6,600	...	...	...	...	5,400	6,600	22.2
Lime production	1,800	1,500	...	...	...	...	1,800	1,500	-16.7
Mineral product use [4]	1,090	365	...	...	...	...	1,090	365	-66.5
Chemical industry	**5,000**	**6,700**	**...**	**...**	**37.80**	**11.70**	**17,000**	**10,000**	**-41.2**
Ammonia production	5,000	6,700	...	...	...	...	5,000	6,700	34.0
Nitric acid production	...	...	...	...	3.27	3.96	1,010	1,230	21.8
Adipic acid production	...	...	...	...	35.00	7.80	11,000	2,400	-78.2

See notes at the end of the table.

Table 3.3 – continued

Greenhouse gas (GHG) emissions by source and sink category

	Carbon dioxide (CO_2)		Methane (CH_4)		Nitrous oxide (N_2O)		CO_2 equivalents [1]		
	1990	2008	1990	2008	1990	2008	1990	2008	Change 1990 to 2008
	kilotonnes								percent
Metal production	**9,770**	**12,600**	**...**	**...**	**...**	**...**	**19,500**	**15,300**	**-21.5**
Iron and steel production	7,060	7,440	...	...	...	...	7,060	7,440	5.4
Aluminum production	2,700	5,200	...	...	...	...	9,300	7,440	-20.0
SF_6 used in magnesium smelters and casters	...	...	...	...	...	...	3,110	460	-85.2
Consumption of halocarbons and SF_6	**...**	...	**...**	**...**	**...**	**...**	**2,300**	**7,300**	**217.4**
Other and undifferentiated production	**8,000**	**11,000**	**...**	**...**	**...**	**...**	**8,000**	**11,000**	37.5
Solvent and other product use	**...**	**...**	**...**	**...**	**0.56**	**1.10**	**170**	**330**	**94.1**
Agriculture	**...**	**...**	**920.00**	**1,200.00**	**94.00**	**120.00**	**48,000**	**62,000**	**29.2**
Enteric fermentation	...	...	810.00	1,100.00	...	...	17,000	22,000	29.4
Manure management	...	...	120.00	140.00	11.00	**15.00**	6,000	7,500	25.0
Agricultural soils	...	...	...	...	82.00	100.00	26,000	32,000	23.1
Direct sources	...	...	...	...	45.00	54.00	14,000	17,000	21.4
Pasture, range and paddock manure	...	...	...	...	8.40	12.00	2,600	3,800	46.2
Indirect sources	...	...	...	...	30.00	40.00	9,000	10,000	11.1
Waste	**270**	**200**	**850.00**	**990.00**	**2.00**	2.00	**19,000**	**22,000**	**15.8**
Solid waste disposal on land	...	...	840.00	970.00	...	...	18,000	20,000	11.1
Wastewater handling	...	...	11.00	13.00	2.00	2.00	740	940	27.0
Waste incineration	270	200	0.40	0.08	0.40	0.20	400	250	-37.5
Land use, land use-change and forestry	**-58,000**	**-19,000**	**180.00**	**200.00**	**7.50**	**8.20**	**-52,000**	**-13,000**	**75.0**
Forest land	-84,000	-25,000	160.00	180.00	6.70	7.70	-79,000	-18,000	77.2
Cropland	12,000	-4,700	10.00	7.00	0.60	0.30	13,000	-4,400	-133.8
Grassland	...	...	...	...	...	...	...	...	...
Wetlands	5,000	2,000	0.30	0.00	0.01	0.00	5,000	2,000	-60.0
Settlements	9,000	7,000	5.00	4.00	0.20	0.10	10,000	7,000	-30.0

1. CO_2 equivalent emissions are the weighted sum of all greenhouse gas emissions. The following global warming potentials are used as the weights: CO_2 = 1; CH_4 = 21; N_2O = 310; HFCs = 140 to 11,700; PFCs = 6,500 to 9,200; SF_6 = 23,900. Not all HFC, PFC and SF_6 data are presented in this table.
2. National totals exclude all GHGs from the Land use, land-use change and forestry sector.
3. Emissions from fuel ethanol are reported within the gasoline transportation sub-categories.
4. The category 'Mineral product use' includes CO_2 emissions coming from the use of limestone & dolomite, soda ash, and magnesite.

Note(s): Figures may not add up to totals due to rounding.
Source(s): Environment Canada, 2010, *National Inventory Report 1990-2008: Greenhouse Gas Sources and Sinks in Canada*, Catalogue no. En81-4/2008E-PDF.

Table 3.4

Direct energy use and greenhouse gas emissions, by sector

	Energy use				Greenhouse gas emissions			
	Total	Business [1]	Non-business [2]	Household	Total	Business [1]	Non-business [2]	Household
	terajoules				carbon dioxide equivalents [3]			
1992	8,474,277	6,069,722	411,746	1,992,809	581,986	470,798	16,056	95,131
1993	8,516,036	6,061,356	393,698	2,060,982	583,445	469,234	14,860	99,351
1994	8,738,126	6,251,620	366,627	2,119,879	602,222	486,453	13,489	102,279
1995	8,949,739	6,482,896	375,797	2,091,046	621,932	506,769	14,188	100,975
1996	9,217,036	6,645,011	381,814	2,190,211	638,696	518,544	14,441	105,711
1997	9,383,707	6,859,499	374,777	2,149,431	650,324	532,799	13,632	103,893
1998	9,539,450	7,090,568	382,074	2,066,808	656,867	542,848	13,989	100,029
1999	9,829,056	7,307,888	387,002	2,134,166	669,486	552,128	14,417	102,941
2000	10,242,348	7,638,001	416,765	2,187,582	693,798	573,240	15,860	104,698
2001	10,091,416	7,513,910	409,720	2,167,786	685,053	566,279	15,345	103,429
2002	10,266,979	7,552,989	457,912	2,256,077	689,115	563,938	17,489	107,688
2003	10,557,868	7,764,124	465,589	2,328,155	712,441	583,992	17,715	110,734
2004	10,498,742	7,658,424	510,846	2,329,473	713,439	583,769	19,474	110,197
2005	10,470,903	7,632,322	497,002	2,341,579	707,050	577,545	18,651	110,854
2006	10,226,719	7,441,155	496,385	2,289,179	690,771	563,363	18,725	108,683
2007 p	10,841,682	7,851,270	565,259	2,425,153	724,949	587,638	22,016	115,295

1. The business sector consists of all establishments, including unincorporated businesses and excluding government and non-profit institutions.
2. The non-business sector consists of general government (including government hospitals and education) and non-profit institutions.
3. Carbon dioxide equivalent emissions are estimated using global warming potentials for methane and nitrous oxide of 21 and 310 respectively.

Source(s): Statistics Canada, CANSIM tables 153-0032 and 153-0034.

Table 3.5-1

Energy and greenhouse gas intensity, by industry, Canada, 2007 — Primary sector

	Energy intensity [1]	Greenhouse gas intensity [2,3,4]
	gigajoules per thousand current dollars of production	tonnes of carbon dioxide equivalent per thousand current dollars of production
Crop and animal production	12.0	2.7
Forestry and logging	7.3	0.6
Fishing, hunting and trapping	10.0	0.7
Support activities for agriculture and forestry	10.3	0.8
Oil and gas extraction	11.4	1.1
Coal mining	9.5	0.9
Metal ore mining	5.7	0.3
Non-metallic mineral mining and quarrying	10.0	0.6
Support activities for mining and oil and gas extraction	7.4	0.5

1. Intensity of energy use is measured in gigajoules per thousand current dollars of production. The current dollar intensity measure is intended for comparing industries in a given year.
2. Intensity of greenhouse gas emissions is measured in tonnes per thousand current dollars of production. The current dollar intensity measure is intended for comparing industries in a given year.
3. Emission sources included in these estimates: combustion of fossil fuels; non-combustion uses of fossil fuels; industrial processes; agricultural soils; livestock manure and enteric fermentation. Emissions from waste management are excluded.
4. Carbon dioxide equivalent emissions are estimated using global warming potentials for methane and nitrous oxide of 21 and 310 respectively.

Note(s): Industries in the primary sector produce the raw materials employed in the economy. Industries in the secondary sector carry out activities that produce physical goods from raw materials, and industries in the tertiary sector carry out activities related to the provision of services. Industry aggregation is at the L-level of the input-output accounts of Statistics Canada. The input-output tables are built around three classification systems, namely the Input-Output Industry Classification (IOIC) for industries, the Input-Output Commodity Classification (IOCC) for commodities and the Input-Output Final Demand Classification (IOFDC) for final demand. Each classification has four level of hierarchy, consisting of the 'W' (working) level, the 'L' (historical-link) level, the 'M' (medium) level and the 'S' (small) level. The Input-Output Industry Classification (IOIC) is based on the industrial standard of the day, which is currently the North American Industry Classification System (NAICS) 2002. The IOIC uses a coding scheme that resembles NAICS, but is modified to reflect the hierarchical structure and organization of the IOIC. The NAICS definition of the IOIC classes as well as its hierarchical structure can be found in 'Input-Output Classification' at the following link: http://www.statcan.gc.ca/imdb-bmdi/1401-eng.htm. The hierarchical structure of the Input-Output Commodity Classification (IOCC) and the Input-Output Final Demand Classification (IOFDC) can be found at the same link.

Source(s): Statistics Canada, CANSIM tables 153-0031 and 153-0033.

Table 3.5-2

Energy and greenhouse gas intensity, by industry, Canada, 2007 — Secondary sector

	Energy intensity [1]	Greenhouse gas intensity [2,3,4]
	gigajoules per thousand current dollars of production	tonnes of carbon dioxide equivalent per thousand current dollars of production
Electric power generation, transmission and distribution	43.6	3.2
Natural gas distribution, water and other systems	5.7	1.0
Residential building construction	5.3	0.4
Non-residential building construction	4.7	0.4
Transportation engineering construction	9.1	0.7
Oil and gas engineering construction	5.5	0.4
Electric power engineering construction	3.1	0.2
Communication engineering construction	4.8	0.3
Other engineering construction	3.8	0.3
Repair construction	4.3	0.3
Other activities of the construction industry	7.4	0.5
Animal food manufacturing	8.5	1.1
Sugar and confectionery product manufacturing	6.0	0.4
Fruit and vegetable preserving and specialty food manufacturing	7.9	0.7
Dairy product manufacturing	9.4	1.5
Meat product manufacturing	8.5	1.4
Seafood product preparation and packaging	7.8	0.6
Miscellaneous food manufacturing	7.7	0.8
Soft-drink and ice manufacturing	5.6	0.4
Breweries	3.6	0.2
Wineries	4.2	0.4
Distilleries	9.7	0.6
Tobacco manufacturing	3.2	0.3
Textile and textile product mills	8.8	0.6
Clothing manufacturing	4.7	0.3
Leather and allied product manufacturing	4.9	0.3
Wood product manufacturing	8.3	0.5
Pulp, paper and paperboard mills	23.2	1.0
Converted paper products manufacturing	11.3	0.5
Printing and related support activities	7.3	0.4
Petroleum and coal products manufacturing	16.8	1.4
Basic chemical manufacturing	20.1	1.7
Resin, synthetic rubber, and artificial and synthetic fibres and filaments manufacturing	16.4	1.4
Pesticides, fertilizer and other agricultural chemical manufacturing	22.2	3.3
Pharmaceutical and medicine manufacturing	3.9	0.3
Miscellaneous chemical product manufacturing	8.8	0.6
Plastics product manufacturing	8.9	0.6
Rubber product manufacturing	9.0	0.6
Cement and concrete product manufacturing	15.1	2.0
Miscellaneous non-metallic mineral product manufacturing	16.7	1.3
Primary metal manufacturing	16.8	0.9
Fabricated metal product manufacturing	8.0	0.4
Machinery manufacturing	5.8	0.3
Computer and peripheral equipment manufacturing	3.2	0.2
Electronic product manufacturing	3.7	0.2
Household appliance manufacturing	7.2	0.4
Electrical equipment and component manufacturing	7.2	0.4
Motor vehicle manufacturing	7.1	0.4
Motor vehicle body and trailer manufacturing	7.2	0.4
Motor vehicle parts manufacturing	7.8	0.4

See notes at the end of the table.

Table 3.5-2 – continued

Energy and greenhouse gas intensity, by industry, Canada, 2007 — Secondary sector

	Energy intensity [1]	Greenhouse gas intensity [2,3,4]
	gigajoules per thousand current dollars of production	tonnes of carbon dioxide equivalent per thousand current dollars of production
Aerospace product and parts manufacturing	3.6	0.2
Railroad rolling stock manufacturing	9.8	0.5
Ship and boat building	6.4	0.4
Other transportation equipment manufacturing	5.4	0.3
Furniture and related product manufacturing	5.6	0.3
Miscellaneous manufacturing	6.1	0.4

1. Intensity of energy use is measured in gigajoules per thousand current dollars of production. The current dollar intensity measure is intended for comparing industries in a given year.
2. Intensity of greenhouse gas emissions is measured in tonnes per thousand current dollars of production. The current dollar intensity measure is intended for comparing industries in a given year.
3. Emission sources included in these estimates: combustion of fossil fuels; non-combustion uses of fossil fuels; industrial processes; agricultural soils; livestock manure and enteric fermentation. Emissions from waste management are excluded.
4. Carbon dioxide equivalent emissions are estimated using global warming potentials for methane and nitrous oxide of 21 and 310 respectively.

Note(s): Industries in the primary sector produce the raw materials employed in the economy. Industries in the secondary sector carry out activities that produce physical goods from raw materials, and industries in the tertiary sector carry out activities related to the provision of services. Industry aggregation is at the L-level of the input-output accounts of Statistics Canada. The input-output tables are built around three classification systems, namely the Input-Output Industry Classification (IOIC) for industries, the Input-Output Commodity Classification (IOCC) for commodities and the Input-Output Final Demand Classification (IOFDC) for final demand. Each classification has four level of hierarchy, consisting of the 'W' (working) level, the 'L' (historical-link) level, the 'M' (medium) level and the 'S' (small) level. The Input-Output Industry Classification (IOIC) is based on the industrial standard of the day, which is currently the North American Industry Classification System (NAICS) 2002. The IOIC uses a coding scheme that resembles NAICS, but is modified to reflect the hierarchical structure and organization of the IOIC. The NAICS definition of the IOIC classes as well as its hierarchical structure can be found in 'Input-Output Classification' at the following link: http://www.statcan.gc.ca/imdb-bmdi/1401-eng.htm. The hierarchical structure of the Input-Output Commodity Classification (IOCC) and the Input-Output Final Demand Classification (IOFDC) can be found at the same link.

Source(s): Statistics Canada, CANSIM tables 153-0031 and 153-0033.

Table 3.5-3

Energy and greenhouse gas intensity, by industry, Canada, 2007 — Tertiary sector

	Energy intensity [1]	Greenhouse gas intensity [2,3,4]
	gigajoules per thousand current dollars of production	tonnes of carbon dioxide equivalent per thousand current dollars of production
Wholesale trade	4.4	0.3
Retail trade	4.0	0.2
Air transportation	20.4	1.4
Rail transportation	11.8	0.9
Water transportation	24.6	1.8
Truck transportation	15.3	1.1
Transit and ground passenger transportation	11.6	0.7
Pipeline transportation	27.6	2.2
Scenic and sightseeing transportation and support activities for transport	5.6	0.4
Postal service and couriers and messengers	5.6	0.4
Warehousing and storage	3.3	0.2
Motion picture and sound recording industries	5.8	0.4
Radio and television broadcasting	3.6	0.2
Pay TV, specialty TV and program distribution and telecommunications	2.0	0.1
Publishing industries, information services and data processing service	3.1	0.2
Monetary authorities and depository credit intermediation	2.3	0.1
Insurance carriers	1.9	0.1
Lessors of real estate	7.1	0.4
Owner-occupied dwellings	0.4	0.0
Rental and leasing services and lessors of non-financial intangible associations	3.9	0.2
Other finance, insurance and real estate and management of companies	3.4	0.2
Advertising and related services	2.6	0.2
Architectural, engineering, legal and accounting services	2.2	0.1
Other professional, scientific and technical services	2.4	0.2
Administrative and support services	2.5	0.2
Waste management and remediation services	6.6	0.5
Educational services (except universities)	4.1	0.2
Health care services (except hospitals) and social assistance	3.3	0.2
Arts, entertainment and recreation	3.9	0.2
Accommodation and food services	4.6	0.4
Repair and maintenance	5.0	0.3
Grant-making, civic, and professional and similar organizations	2.7	0.1
Personal and laundry services and private households	3.3	0.2
Operating supplies	7.4	0.5
Office supplies	6.3	0.3
Cafeteria supplies	8.2	1.0
Laboratory supplies	7.6	0.5
Travel and entertainment	12.5	0.9
Advertising and promotion	3.6	0.2
Transportation margins	14.0	1.0
Religious organizations	9.5	0.5
Non-profit welfare organization	3.5	0.2
Non-profit sports and recreation clubs	9.1	0.5
Other non-profit institutions serving households	4.5	0.2
Non-profit education services	5.4	0.3
Hospitals	3.2	0.2
Government residential care facilities	1.7	0.1

See notes at the end of the table.

Table 3.5-3 – continued

Energy and greenhouse gas intensity, by industry, Canada, 2007 — Tertiary sector

	Energy intensity [1]	Greenhouse gas intensity [2,3,4]
	gigajoules per thousand current dollars of production	tonnes of carbon dioxide equivalent per thousand current dollars of production
Universities	4.5	0.2
Government education services	3.6	0.2
Other municipal government services	6.4	0.4
Other provincial and territorial government services	3.1	0.2
Other federal government services and defence services	3.2	0.2

1. Intensity of energy use is measured in gigajoules per thousand current dollars of production. The current dollar intensity measure is intended for comparing industries in a given year.
2. Intensity of greenhouse gas emissions is measured in tonnes per thousand current dollars of production. The current dollar intensity measure is intended for comparing industries in a given year.
3. Emission sources included in these estimates: combustion of fossil fuels; non-combustion uses of fossil fuels; industrial processes; agricultural soils; livestock manure and enteric fermentation. Emissions from waste management are excluded.
4. Carbon dioxide equivalent emissions are estimated using global warming potentials for methane and nitrous oxide of 21 and 310 respectively.

Note(s): Industries in the primary sector produce the raw materials employed in the economy. Industries in the secondary sector carry out activities that produce physical goods from raw materials, and industries in the tertiary sector carry out activities related to the provision of services. Industry aggregation is at the L-level of the input-output accounts of Statistics Canada. The input-output tables are built around three classification systems, namely the Input-Output Industry Classification (IOIC) for industries, the Input-Output Commodity Classification (IOCC) for commodities and the Input-Output Final Demand Classification (IOFDC) for final demand. Each classification has four level of hierarchy, consisting of the 'W' (working) level, the 'L' (historical-link) level, the 'M' (medium) level and the 'S' (small) level. The Input-Output Industry Classification (IOIC) is based on the industrial standard of the day, which is currently the North American Industry Classification System (NAICS) 2002. The IOIC uses a coding scheme that resembles NAICS, but is modified to reflect the hierarchical structure and organization of the IOIC. The NAICS definition of the IOIC classes as well as its hierarchical structure can be found in 'Input-Output Classification' at the following link: http://www.statcan.gc.ca/imdb-bmdi/1401-eng.htm. The hierarchical structure of the Input-Output Commodity Classification (IOCC) and the Input-Output Final Demand Classification (IOFDC) can be found at the same link.

Source(s): Statistics Canada, CANSIM tables 153-0031 and 153-0033.

Table 3.6-1
Index of energy and greenhouse gas intensity, by industry, Canada — Primary sector

	Energy intensity [1]				Greenhouse gas intensity [2,3,4]			
	1995	2000	2005	2007	1995	2000	2005	2007
	1990=100							
Crop and animal production	111.0	99.6	94.6	93.8	104.8	96.4	92.1	89.7
Forestry and logging	115.8	118.7	106.5	95.1	117.3	116.5	106.9	97.5
Fishing, hunting and trapping	139.7	187.6	149.7	145.8	140.5	181.8	147.6	143.2
Support activities for agriculture and forestry	95.8	131.6	153.3	151.6	96.6	134.8	160.2	157.7
Oil and gas extraction	91.2	96.8	94.8	90.8	96.9	96.4	90.0	86.3
Coal mining	97.9	97.9	79.7	93.1	97.4	78.5	62.3	74.1
Metal ore mining	93.2	88.7	85.3	68.8	91.8	96.0	90.0	74.0
Non-metallic mineral mining and quarrying	98.5	91.6	69.9	68.5	98.3	95.0	74.7	71.9
Support activities for mining and oil and gas extraction	87.5	91.4	90.1	81.5	87.3	89.5	90.2	80.9

1. Intensity of energy use is measured in gigajoules per thousand dollars of production. Constant dollar intensity measures are presented as an index, 1990=100; based on gigajoules per thousand chained fisher constant dollars of production. The constant dollar intensity should be used for trend analysis for a given industry.
2. Intensity of greenhouse gas emissions is measured in tonnes per thousand dollars of production. Constant dollar intensity measures are presented as an index, 1990=100; based on tonnes per thousand chained fisher constant dollars of production. The constant dollar intensity should be used for trend analysis for a given industry.
3. Emission sources included in these estimates: combustion of fossil fuels; non-combustion uses of fossil fuels; industrial processes; agricultural soils; livestock manure and enteric fermentation. Emissions from waste management are excluded.
4. Carbon dioxide equivalent emissions are estimated using global warming potentials for methane and nitrous oxide of 21 and 310 respectively.

Note(s): Industries in the primary sector produce the raw materials employed in the economy. Industries in the secondary sector carry out activities that produce physical goods from raw materials, and industries in the tertiary sector carry out activities related to the provision of services. Industry aggregation is at the L-level of the input-output accounts of Statistics Canada. The input-output tables are built around three classification systems, namely the Input-Output Industry Classification (IOIC) for industries, the Input-Output Commodity Classification (IOCC) for commodities and the Input-Output Final Demand Classification (IOFDC) for final demand. Each classification has four level of hierarchy, consisting of the 'W' (working) level, the 'L' (historical-link) level, the 'M' (medium) level and the 'S' (small) level. The Input-Output Industry Classification (IOIC) is based on the industrial standard of the day, which is currently the North American Industry Classification System (NAICS) 2002. The IOIC uses a coding scheme that resembles NAICS, but is modified to reflect the hierarchical structure and organization of the IOIC. The NAICS definition of the IOIC classes as well as its hierarchical structure can be found in 'Input-Output Classification' at the following link: http://www.statcan.gc.ca/imdb-bmdi/1401-eng.htm. The hierarchical structure of the Input-Output Commodity Classification (IOCC) and the Input-Output Final Demand Classification (IOFDC) can be found at the same link.

Source(s): Statistics Canada, CANSIM tables 153-0031 and 153-0033.

Table 3.6-2

Index of energy and greenhouse gas intensity, by industry, Canada — Secondary sector

	Energy intensity [1]				Greenhouse gas intensity [2,3,4]			
	1995	2000	2005	2007	1995	2000	2005	2007
	1990=100							
Electric power generation, transmission and distribution	92.2	118.8	105.2	103.1	90.1	112.3	100.9	95.9
Natural gas distribution, water and other systems	105.8	69.3	67.3	69.1	95.7	78.5	81.6	78.1
Residential building construction	105.8	95.7	95.0	91.3	107.5	95.2	94.1	89.2
Non-residential building construction	107.2	95.3	96.0	92.4	109.5	96.3	95.9	91.2
Transportation engineering construction	94.4	84.0	86.0	83.6	97.5	87.0	88.2	84.8
Oil and gas engineering construction	94.8	92.9	88.9	77.8	94.4	94.6	91.0	80.2
Electric power engineering construction	98.8	78.4	74.9	69.4	98.9	75.8	69.9	65.2
Communication engineering construction	111.7	102.1	99.4	98.2	112.6	102.8	102.6	100.0
Other engineering construction	103.7	83.2	77.6	73.2	106.5	83.8	77.0	72.0
Repair construction	97.2	82.5	87.4	84.4	99.1	80.8	86.7	83.2
Other activities of the construction industry	101.6	131.7	115.9	115.6	103.5	133.7	115.2	111.8
Animal food manufacturing	104.7	89.8	78.2	78.5	107.7	94.8	82.6	80.4
Sugar and confectionery product manufacturing	95.7	92.0	86.1	89.8	96.4	91.6	85.2	92.0
Fruit and vegetable preserving and specialty food manufacturing	97.7	89.3	90.4	85.4	102.7	93.7	96.0	88.4
Dairy product manufacturing	110.0	93.3	89.3	89.5	109.7	93.8	90.8	88.8
Meat product manufacturing	105.9	94.6	82.2	77.1	101.8	93.5	80.9	71.8
Seafood product preparation and packaging	125.8	142.2	117.5	117.1	131.5	127.5	110.0	108.2
Miscellaneous food manufacturing	101.1	98.5	94.5	92.1	107.7	101.6	96.5	94.0
Soft-drink and ice manufacturing	115.2	94.5	79.3	75.6	120.2	90.6	76.6	72.2
Breweries	87.8	83.7	70.4	62.3	85.9	85.4	70.8	61.8
Wineries	104.5	74.9	56.2	56.6	111.1	83.6	63.2	58.4
Distilleries	86.4	76.8	89.6	80.7	82.7	75.9	88.5	79.0
Tobacco manufacturing	82.7	74.8	65.2	60.1	82.5	67.2	51.5	41.8
Textile and textile product mills	89.6	77.0	76.1	80.5	87.7	50.2	54.2	55.8
Clothing manufacturing	93.0	83.5	72.9	75.3	88.9	60.9	56.0	56.3
Leather and allied product manufacturing	98.8	87.3	81.2	81.0	99.2	79.2	74.4	69.6
Wood product manufacturing	108.1	95.0	92.0	93.3	105.7	91.0	89.4	89.0
Pulp, paper and paperboard mills	87.7	86.2	85.4	79.6	82.4	78.8	78.8	74.4
Converted paper products manufacturing	90.6	79.5	74.1	73.3	87.3	71.6	67.6	66.6
Printing and related support activities	102.0	87.2	77.5	73.5	96.3	82.3	76.4	72.8
Petroleum and coal products manufacturing	90.1	88.2	90.1	88.5	94.3	91.4	89.4	86.6
Basic chemical manufacturing	88.3	101.5	105.1	96.3	103.5	102.6	115.1	113.0
Resin, synthetic rubber, and artificial and synthetic fibres and filaments manufacturing	103.2	103.6	98.8	103.8	86.9	39.7	46.0	45.8
Pesticides, fertilizer and other agricultural chemical manufacturing	108.2	110.2	89.4	90.0	108.0	102.2	79.4	81.9
Pharmaceutical and medicine manufacturing	113.3	126.3	104.2	96.2	115.4	109.0	91.2	85.3
Miscellaneous chemical product manufacturing	89.9	105.4	108.9	101.3	97.5	90.9	104.3	98.2
Plastics product manufacturing	96.8	83.2	84.4	84.2	96.6	51.7	57.6	56.7
Rubber product manufacturing	87.1	86.9	85.3	95.1	92.8	78.5	83.6	92.6
Cement and concrete product manufacturing	113.6	84.6	73.7	71.3	125.1	94.8	83.2	79.3
Miscellaneous non-metallic mineral product manufacturing	102.5	85.6	79.8	81.7	101.6	85.0	78.2	77.8
Primary metal manufacturing	96.4	81.3	77.5	74.1	92.8	80.2	76.0	72.7
Fabricated metal product manufacturing	97.7	72.1	75.5	71.7	94.8	73.0	75.5	71.4
Machinery manufacturing	95.9	75.8	80.1	76.9	93.0	76.4	81.2	77.4
Computer and peripheral equipment manufacturing	89.8	63.8	50.8	48.6	101.9	82.9	69.9	66.1
Electronic product manufacturing	91.5	84.3	85.0	83.9	92.7	85.2	87.6	85.3
Household appliance manufacturing	97.3	82.4	79.9	80.3	98.6	82.1	80.7	82.4
Electrical equipment and component manufacturing	103.7	71.7	75.1	78.5	105.5	68.2	71.0	72.6
Motor vehicle manufacturing	88.6	72.2	79.7	79.6	88.4	69.9	78.6	77.5
Motor vehicle body and trailer manufacturing	103.3	82.8	87.6	86.1	100.8	80.0	84.3	82.2
Motor vehicle parts manufacturing	87.9	72.1	79.1	74.9	88.0	70.9	78.8	73.6
Aerospace product and parts manufacturing	72.5	64.4	65.6	59.1	68.5	64.5	65.0	58.2
Railroad rolling stock manufacturing	116.6	91.3	148.5	140.1	112.1	91.8	145.4	135.9
Ship and boat building	82.7	107.2	102.0	99.5	83.9	100.6	102.4	96.4

See notes at the end of the table.

Table 3.6-2 – continued

Index of energy and greenhouse gas intensity, by industry, Canada — Secondary sector

	Energy intensity [1]				Greenhouse gas intensity [2,3,4]			
	1995	2000	2005	2007	1995	2000	2005	2007
	1990=100							
Other transportation equipment manufacturing	90.7	87.7	99.4	98.7	89.3	89.7	101.4	99.7
Furniture and related product manufacturing	93.5	81.4	81.4	79.6	93.0	77.2	77.7	73.9
Miscellaneous manufacturing	90.2	77.7	69.2	71.2	90.8	72.2	67.6	67.7

1. Intensity of energy use is measured in gigajoules per thousand dollars of production. Constant dollar intensity measures are presented as an index, 1990=100; based on gigajoules per thousand chained fisher constant dollars of production. The constant dollar intensity should be used for trend analysis for a given industry.
2. Intensity of greenhouse gas emissions is measured in tonnes per thousand dollars of production. Constant dollar intensity measures are presented as an index, 1990=100; based on tonnes per thousand chained fisher constant dollars of production. The constant dollar intensity should be used for trend analysis for a given industry.
3. Emission sources included in these estimates: combustion of fossil fuels; non-combustion uses of fossil fuels; industrial processes; agricultural soils; livestock manure and enteric fermentation. Emissions from waste management are excluded.
4. Carbon dioxide equivalent emissions are estimated using global warming potentials for methane and nitrous oxide of 21 and 310 respectively.

Note(s): Industries in the primary sector produce the raw materials employed in the economy. Industries in the secondary sector carry out activities that produce physical goods from raw materials, and industries in the tertiary sector carry out activities related to the provision of services. Industry aggregation is at the L-level of the input-output accounts of Statistics Canada. The input-output tables are built around three classification systems, namely the Input-Output Industry Classification (IOIC) for industries, the Input-Output Commodity Classification (IOCC) for commodities and the Input-Output Final Demand Classification (IOFDC) for final demand. Each classification has four level of hierarchy, consisting of the 'W' (working) level, the 'L' (historical-link) level, the 'M' (medium) level and the 'S' (small) level. The Input-Output Industry Classification (IOIC) is based on the industrial standard of the day, which is currently the North American Industry Classification System (NAICS) 2002. The IOIC uses a coding scheme that resembles NAICS, but is modified to reflect the hierarchical structure and organization of the IOIC. The NAICS definition of the IOIC classes as well as its hierarchical structure can be found in 'Input-Output Classification' at the following link: http://www.statcan.gc.ca/imdb-bmdi/1401-eng.htm. The hierarchical structure of the Input-Output Commodity Classification (IOCC) and the Input-Output Final Demand Classification (IOFDC) can be found at the same link.

Source(s): Statistics Canada, CANSIM tables 153-0031 and 153-0033.

Table 3.6-3

Index of energy and greenhouse gas intensity, by industry, Canada — Tertiary sector

	Energy intensity [1]				Greenhouse gas intensity [2,3,4]			
	1995	2000	2005	2007	1995	2000	2005	2007
	1990=100							
Wholesale trade	105.8	128.7	103.2	102.2	103.3	128.2	104.7	102.6
Retail trade	100.2	106.0	79.3	75.8	100.1	107.9	82.7	78.5
Air transportation	102.2	116.2	126.7	119.4	101.8	114.2	125.6	117.7
Rail transportation	81.8	62.1	62.7	67.2	81.9	63.2	64.2	68.7
Water transportation	102.4	100.3	112.3	125.6	103.0	100.0	112.1	123.8
Truck transportation	88.5	86.9	81.5	90.7	88.8	89.8	83.4	92.6
Transit and ground passenger transportation	91.5	79.4	83.0	88.4	91.1	78.9	80.8	84.3
Pipeline transportation	112.2	90.7	77.9	70.0	100.0	82.7	73.5	68.3
Scenic and sightseeing transportation and support activities for transport	96.5	76.5	78.1	83.4	95.5	73.3	75.8	80.8
Postal service and couriers and messengers	113.7	121.4	123.7	130.2	113.5	124.5	127.7	133.0
Warehousing and storage	91.4	79.1	57.8	57.4	89.9	74.7	59.6	58.6
Motion picture and sound recording industries	99.4	93.1	77.6	75.3	100.2	94.1	83.1	80.1
Radio and television broadcasting	99.3	108.6	106.7	116.3	99.0	107.8	109.4	116.8
Pay TV, specialty TV and program distribution and telecommunications	109.8	102.0	92.6	88.1	109.5	105.4	97.7	91.9
Publishing industries, information services and data processing service	94.5	96.0	69.4	64.4	91.9	97.5	74.4	69.6
Monetary authorities and depository credit intermediation	88.6	111.5	109.8	100.0	89.3	109.4	109.7	98.8
Insurance carriers	89.3	79.8	79.2	77.4	89.6	82.9	84.5	81.1
Lessors of real estate	97.6	92.2	88.8	97.0	98.5	90.2	91.1	98.9
Owner-occupied dwellings	82.8	89.3	115.7	113.0	83.6	87.1	116.5	113.2
Rental and leasing services and lessors of non-financial intangible associations	67.0	77.8	63.5	64.0	64.8	72.9	62.1	62.2
Other finance, insurance and real estate and management of companies	91.4	88.0	74.5	72.7	92.4	88.5	76.1	72.4
Advertising and related services	98.1	104.9	70.6	71.3	96.8	104.9	74.4	74.4
Architectural, engineering, legal and accounting services	110.2	142.4	120.6	119.6	110.6	141.2	121.0	118.7
Other professional, scientific and technical services	102.2	124.6	98.5	95.7	104.2	126.8	104.9	101.4
Administrative and support services	103.2	149.4	122.4	118.4	105.3	157.4	132.0	127.2
Waste management and remediation services	42.4	50.5	42.6	38.1	43.3	51.8	44.5	39.5
Educational services (except universities)	90.4	71.7	57.9	51.0	89.8	73.5	60.3	52.2
Health care services (except hospitals) and social assistance	85.8	110.7	107.6	118.8	86.4	104.0	104.4	113.0
Arts, entertainment and recreation	96.4	93.5	83.7	82.4	97.4	92.1	83.8	81.8
Accommodation and food services	96.6	102.6	90.5	87.1	98.4	99.2	88.3	83.1
Repair and maintenance	100.6	140.2	111.0	113.8	100.7	136.6	113.2	114.6
Grant-making, civic, and professional and similar organizations	95.6	94.4	76.5	73.1	95.0	78.6	66.5	62.9
Personal and laundry services and private households	100.8	115.7	100.4	93.2	99.7	103.5	94.8	87.3
Operating supplies	104.4	94.8	102.6	100.5	103.5	87.1	97.6	95.9
Office supplies	104.8	93.9	83.4	78.0	101.8	89.9	83.6	77.9
Cafeteria supplies	104.4	96.2	86.5	84.4	103.0	91.6	81.3	76.3
Laboratory supplies	97.4	98.0	112.4	113.2	104.0	92.1	112.0	116.4
Travel and entertainment	97.7	107.5	113.9	110.8	97.8	106.0	112.2	108.0
Advertising and promotion	97.2	98.0	80.2	78.6	95.6	98.3	83.9	81.9
Transportation margins	86.6	78.6	76.9	85.0	86.5	80.6	78.5	86.4
Religious organizations	95.7	116.0	124.0	134.1	93.8	116.0	128.3	137.0
Non-profit welfare organization	84.7	94.4	78.3	81.4	82.9	91.3	77.6	79.4
Non-profit sports and recreation clubs	94.8	110.0	109.7	120.2	95.7	95.4	95.6	102.6
Other non-profit institutions serving households	87.7	63.4	71.7	75.6	89.2	59.3	68.0	70.6
Non-profit education services	89.2	115.9	107.6	98.2	89.0	110.7	105.1	94.9
Hospitals	104.5	119.7	124.0	126.0	100.0	103.2	109.0	108.7
Government residential care facilities	82.9	76.9	80.4	82.0	83.8	69.5	71.3	70.3
Universities	90.1	123.0	108.7	111.4	89.4	119.4	107.1	109.2
Government education services	88.0	86.9	98.7	97.2	85.6	87.6	101.3	97.4

See notes at the end of the table.

Table 3.6-3 – continued

Index of energy and greenhouse gas intensity, by industry, Canada — Tertiary sector

	Energy intensity [1]				Greenhouse gas intensity [2,3,4]			
	1995	2000	2005	2007	1995	2000	2005	2007
	1990=100							
Other municipal government services	86.6	98.4	107.5	110.6	86.3	101.4	111.6	114.8
Other provincial and territorial government services	86.8	92.5	83.2	84.1	89.7	90.4	84.8	84.9
Other federal government services and defence services	87.9	80.4	75.8	73.5	87.0	79.0	75.9	73.7

1. Intensity of energy use is measured in gigajoules per thousand dollars of production. Constant dollar intensity measures are presented as an index, 1990=100; based on gigajoules per thousand chained fisher constant dollars of production. The constant dollar intensity should be used for trend analysis for a given industry.
2. Intensity of greenhouse gas emissions is measured in tonnes per thousand dollars of production. Constant dollar intensity measures are presented as an index, 1990=100; based on tonnes per thousand chained fisher constant dollars of production. The constant dollar intensity should be used for trend analysis for a given industry.
3. Emission sources included in these estimates: combustion of fossil fuels; non-combustion uses of fossil fuels; industrial processes; agricultural soils; livestock manure and enteric fermentation. Emissions from waste management are excluded.
4. Carbon dioxide equivalent emissions are estimated using global warming potentials for methane and nitrous oxide of 21 and 310 respectively.

Note(s): Industries in the primary sector produce the raw materials employed in the economy. Industries in the secondary sector carry out activities that produce physical goods from raw materials, and industries in the tertiary sector carry out activities related to the provision of services. Industry aggregation is at the L-level of the input-output accounts of Statistics Canada. The input-output tables are built around three classification systems, namely the Input-Output Industry Classification (IOIC) for industries, the Input-Output Commodity Classification (IOCC) for commodities and the Input-Output Final Demand Classification (IOFDC) for final demand. Each classification has four level of hierarchy, consisting of the 'W' (working) level, the 'L' (historical-link) level, the 'M' (medium) level and the 'S' (small) level. The Input-Output Industry Classification (IOIC) is based on the industrial standard of the day, which is currently the North American Industry Classification System (NAICS) 2002. The IOIC uses a coding scheme that resembles NAICS, but is modified to reflect the hierarchical structure and organization of the IOIC. The NAICS definition of the IOIC classes as well as its hierarchical structure can be found in 'Input-Output Classification' at the following link: http://www.statcan.gc.ca/imdb-bmdi/1401-eng.htm. The hierarchical structure of the Input-Output Commodity Classification (IOCC) and the Input-Output Final Demand Classification (IOFDC) can be found at the same link.

Source(s): Statistics Canada, CANSIM tables 153-0031 and 153-0033.

Table 3.7

Forest land by province and territory

	Forest land			
	Total area	Reserved	Non-reserved	Non-reserved area stocked and with access
	thousands of hectares			percent
Canada	**310,134**	**15,298**	**294,836**	**43.7**
Newfoundland and Labrador	10,730	72	10,658	26.7
Prince Edward Island	265	1	264	96.2
Nova Scotia	4,240	322	3,917	94.7
New Brunswick	6,091	32	6,059	91.5
Quebec	73,360	693	72,667	43.6
Ontario	53,758	3,543	50,215	46.1
Manitoba	18,968	1,345	17,623	35.3
Saskatchewan	20,043	647	19,396	32.3
Alberta	27,718	3,443	24,275	54.6
British Columbia	57,910	4,124	53,786	58.7
Yukon	7,884	214	7,669	15.7
Northwest Territories	28,352	861	27,492	11.1
Nunavut	815	..	815	0.1

Note(s): The most recent inventory data are for 2001.

Source(s): Canadian Council of Forest Ministers, n.d. (no date), *Canada's National Forest Inventory: History (CanFI-2001)*, *https://nfi.nfis.org/canfi.php?page=summaries&lang=en* (accessed January 31, 2011).

Table 3.8
Forest area harvested by province and territory

	Canada	Newfoundland and Labrador	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba
	hectares							
1975	680,301 r	15,700 2	1,600 2	27,260	94,400 2	135,094 3	196,760 3	12,003 r
1976	706,120 2	14,700 2	1,600 2	26,285	92,800 2	181,737 3	156,721 3	17,000 2
1977	736,138 2	14,300 2	1,600 2	28,335	86,500 2	193,295 3	187,993 3	18,000 2
1978	826,507 2	17,600 2	1,600 2	32,120	89,200 2	226,127 3	194,998 3	20,000 2
1979	877,750 2	17,700 2	1,780 2	33,703	100,000 2	241,826 3	218,579 3	24,600 2
1980	881,004 r	15,175	2,500 2	36,439 2	85,900 2	245,000 3	242,679 3	15,467 r
1981	806,011 r	13,454	2,700 2	36,429 2	65,500 2	250,000 3	227,603 3	11,880 r
1982	762,656 r	8,000	2,700 2	35,710 2	72,445 2	195,000 3	222,921 3	9,854 r
1983	838,688 r	13,900	2,500 2	20,745 3	81,570 2	272,085 3	183,208 3	10,002 r
1984	897,714 r	17,600	2,500 2	30,604 3	83,000 2	280,739 3	217,806 3	11,154 r
1985	899,245 r	16,400	3,200 2	29,778 3	87,070 2	266,180 3	217,984 3	11,259 r
1986	974,606 3	17,440	2,350	34,121 3	86,898	297,616 3	223,517 3	11,128
1987	1,054,091 3	18,940	2,725	42,266 3	88,976	329,300 3	228,464 3	12,362
1988	1,093,685 3	19,628	2,731	41,421 3	99,192	337,668 3	237,188 3	12,378
1989	1,022,950 3	19,449	2,421	36,733 3	90,114	342,231 3	230,308 3	12,205
1990	914,783 2	22,100 2	2,497 2	39,898 2	88,924 2	262,027	238,213	10,349
1991	860,824 r	19,044	2,311 r	38,169 2	89,808 2	239,009 2	199,720	8,518
1992	917,695 r	18,556	2,753 r	34,820 2	99,751 2	262,928	190,676	11,414
1993	965,664 r	21,076	3,109 r	43,568 2	97,793 2	293,239	209,370 r	10,993
1994	1,011,249 r	19,643	3,237 r	49,084	92,790 3	327,838	211,474 r	12,653
1995	1,037,680 r	19,737	3,152 r	49,968	109,326 2	346,258	214,086 r	14,176
1996	1,059,123 r	17,649	2,787 2	59,053	114,639 2	342,328	213,235 r	15,342
1997	1,084,425 r	20,000 2	4,338 r	69,761 r	115,875 2	384,370	209,286 r	15,544
1998	1,073,951 r	17,414 2	4,376 r	54,203	116,872 2	369,907	225,132	16,590
1999	1,059,650 r	22,744	5,796 r	49,680 2	110,525 2	370,236	207,671	15,509
2000	1,068,754 r	23,216 p	5,522 r	54,433	113,414 2	344,137	213,260 r	15,633
2001	1,015,319 r	22,980 r	4,903 2	53,226 r	103,460 2	323,609	220,607 r	14,849
2002	1,000,758 r	22,000	4,627 2	51,657 r	98,567 2	339,064 r	194,941	15,042
2003	995,040 r	22,110	5,754 2	52,904 2	99,972 2	284,563 r	231,217 r	15,584
2004	1,010,548 r	22,867	5,495 2	59,504 2	98,329 2	306,321 r	210,226	17,528
2005	1,058,506 r	23,664 2	2,001 2	54,326 2	92,756 2	323,642 r	225,213	13,648
2006	831,424 r	17,280 2	2,195 2	43,542 2	77,217 2	213,886 p	211,874	13,648 2
2007	766,063 r	16,999 2	2,110 2	43,918 2	72,248 2	180,766 p	183,985	13,648 2
2008	678,735 2	16,977 2	2,133 2	41,346 2	72,241 2	147,618 2	158,651	13,736 2
2009	..	..	..	..	..	..	..	..

See notes at the end of the table.

Table 3.8 – continued

Forest area harvested by province and territory

	Canada	Saskatchewan	Alberta	British Columbia	Yukon	Northwest Territories [1]
	hectares					
1975	680,301 r	17,500	21,682	156,976 3	620 3	706
1976	706,120 2	16,900	21,469	175,952 3	560 3	396
1977	736,138 2	16,200	22,399	166,081 3	747 3	688
1978	826,507 2	21,100	25,601	196,533 3	935 3	693
1979	877,750 2	25,100	26,006	187,547 3	280	629
1980	881,004 r	16,930	32,280	187,834 3	58	742
1981	806,011 r	18,280	31,328	147,889 3	45	903
1982	762,656 r	15,830	37,554	162,172 3	43	427
1983	838,688 r	19,690	45,569	188,228 3	321	870
1984	897,714 r	21,910	32,312	198,453 3	561	1,075
1985	899,245 r	19,693	36,159	210,397 3	135	990
1986	974,606 3	19,356	41,604	239,877 3	299	400
1987	1,054,091 3	25,742	43,490	259,982 3	1,172	672
1988	1,093,685 3	22,089	50,125	270,401 3	465	399
1989	1,022,950 3	22,281	46,820	218,384 3	1,554	450
1990	914,783 2	16,543	51,869	181,530	366 2	467
1991	860,824 r	17,522	52,314	193,654 2	350 2	405
1992	917,695 r	18,471	55,569	221,599	639 2	519
1993	965,664 r	19,456	58,074	207,748	634 2	604
1994	1,011,249 r	24,221	77,507	190,244	2,056 2	502 2
1995	1,037,680 r	21,907	67,979	189,608	833	650 2
1996	1,059,123 r	21,379	71,322	199,029	1,921 2	439
1997	1,084,425 r	17,500 2	71,899	173,772 r	1,450 2	630
1998	1,073,951 r	21,169 2	71,076	176,142	489 r	581 2
1999	1,059,650 r	21,169 2	79,161	176,312	603 r	244 2
2000	1,068,754 r	21,169 2	73,488	204,472	7 2	3 2
2001	1,015,319 r	23,222	79,357	169,055	49 2	2 2
2002	1,000,758 r	25,070 2	81,965	167,774 r	42 2	9 2
2003	995,040 r	29,053	79,707	174,101	44 2	31 2
2004	1,010,548 r	29,241	79,979	180,959	48	51
2005	1,058,506 r	41,825	83,670 r	197,599	21 2	141 2
2006	831,424 r	15,433	73,695 r	162,328	185 2	141 2
2007	766,063 r	14,588	69,380 r	168,160	210 2	51 2
2008	678,735 2	13,078 2	68,370 p	144,335	190 2	60 2
2009	..	7,420	..	..	..	..

1. Includes Nunavut up to 1998. Figures not available for Nunavut from 1999 to 2009.
2. Estimated by provincial or territorial forestry agency.
3. Estimated by the Canadian Forest Service or by Statistics Canada.

Source(s): Canadian Council of Forest Ministers, 2010, *Silviculture - National Tables*, *http://nfdp.ccfm.org/silviculture/national_e.php* (accessed February 8, 2011).

Table 3.9
Area of stocked timber-productive forest land burned

	Canada	Newfoundland and Labrador	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba
	hectares							
1980	1,355,074 r	680	..	559	2,116 r	4,902	330,825	304,049
1981	1,306,648 r	2,893	22	169	92	2,170	40,817	220,336 r
1982	838,789 r	4,392	25	359	5,407	7,202	297	7,094
1983	409,489 r	107	50	92	1,129	206,952	74,663	66,962
1984	181,013	1,565	8	193	270	2,397	2,219	51,099
1985	132,886 r	40,457	4	220	1,348 r	1,952	127	5,367
1986	311,367	23,511	85	268	37,216	173,296	50,598	5,495
1987	306,516	10,622	16	312	895	27,849	5,461	84,266
1988	639,777 r	7	2	89 r	1,778	273,066	35,994	295,930
1989	3,877,394 r	2,651	2	159	280	2,108,206	4,990	1,539,180
1990	265,990	2,601	4	477	5,198	76,825	3,200	6,728
1991	623,731	9,576	23	1,022	2,732	356,234	4,971	55,266
1992	262,846	1,014	8	805	4,668	24,295	10,331	185,299
1993	415,885	21	6	120	534	125,211	2,116	43,400
1994	742,240	692	7	67	239	2,830	410	552,571
1995	1,432,488	128	14	149	395	407,299	60,739	445,425
1996	607,686 2	8,519	0	172	1,591	410,342	179,207	..
1997	169,484	153	..	184	145	147,417	16,010	..
1998	313,548	4,630	..	168	275	16,721	57,659	..
1999	..	20,779	..	1,174	1,135	88,472	72,481	..
2000	..	68	..	359	269	603	613	..
2001	84,000	184	29	333	565	1,274	1,610	..
2002	..	1,238	9	149	230	405,375	18,468	..
2003	..	1,286	1	943	174	18,421	50,060	..
2004	..	289	6	130	267	717	46	..
2005	..	22	29	163	263	416,027	23,320	..
2006	..	2,526	17	308	310	43,438	43,458	..
2007	..	0	17	258	445	298,708	21,054	..
2008	..	480	1	2,119	72	128	555	..
2009	..	..	..	..	..	46,184	..	..

See notes at the end of the table.

Table 3.9 – continued

Area of stocked timber-productive forest land burned

	Canada	Saskatchewan	Alberta	British Columbia	Yukon	Northwest Territories [1]	National parks
	hectares						
1980	1,355,074 r	89,237	465,451 r	32,743	111,537	12,975	..
1981	1,306,648 r	..	944,494 r	57,277	12,735	25,643	..
1982	838,789 r	..	462,674 r	280,676	68,127	2,536	..
1983	409,489 r	9,478	1,215 r	32,848	14,805	1,188	..
1984	181,013	47,281	35,259	12,227	6,995	134	21,366
1985	132,886 r	9,020	3,820	54,231	11,407	6	4,927
1986	311,367	4,031	1,587	9,474	3,132	11	2,663
1987	306,516	129,332	24,295	22,308	1,150	10	..
1988	639,777 r	24,187	5,149 r	3,284	288	3	..
1989	3,877,394 r	137,404	2,994 r	11,089	70,439	..	..
1990	265,990	71,198	22,143	52,575	..	..	25,041
1991	623,731	118,850	1,357	11,249	61,227	..	1,224
1992	262,846	12,768	720	17,212	3,785	..	1,941
1993	415,885	227,208	12,894	1,376	..	..	2,999
1994	742,240	79,641	8,610	20,737	..	..	76,436
1995	1,432,488	320,993	163,376	26,888	..	..	7,082
1996	607,686 [2]	4,755 [2]	430	2,670	..	..	…
1997	169,484	1,904	3,046	286	..	..	339
1998	313,548	..	234,095	..	..	..	..
1999	..	..	52,887	..	..	..	..
2000	..	..	3,802	14,376 r	..	..	..
2001	84,000	..	74,538	5,467	..	..	..
2002	..	..	361,091	..	..	..	..
2003	..	..	25,747 r	..	..	..	..
2004	..	..	…	..	..	..	..
2005	..	..	…	3,953	..	..	..
2006	..	..	…	327,042	..	..	..
2007	..	..	..	19,473	..	..	..
2008	..	..	..	58	..	..	..
2009	..	..	..	..	..	0	..

1. Includes Nunavut up to 1998. Figures not available for Nunavut from 1999 to 2009.
2. Estimated by the Canadian Forest Service or by Statistics Canada.

Source(s): Canadian Council of Forest Ministers, 2010, *Forest Fires - National Tables*, *http://nfdp.ccfm.org/fires/national_e.php* (accessed February 8, 2011).

Table 3.10

Fertilized area by province

	1971	1976	1981	1986	1991	1996	2001	2006
	square kilometres							
All provinces	**69,282.9**	**..**	**185,052.0**	**231,479.7**	**215,618.3**	**249,426.4**	**240,146.4**	**253,480.1**
Newfoundland and Labrador	22.9	..	44.1	47.6	54.3	64.6	64.0	61.4
Prince Edward Island	561.0	..	1,074.4	1,133.0	1,021.2	1,195.4	1,101.0	1,121.9
Nova Scotia	381.3	..	885.4	850.4	822.7	885.5	883.6	819.2
New Brunswick	371.7	..	760.0	840.5	781.4	907.4	900.6	881.2
Quebec	4,692.4	..	11,054.0	11,892.3	9,967.2	9,910.6	10,017.2	10,436.3
Ontario	12,522.6	..	25,338.2	25,911.3	22,734.5	24,075.2	22,317.7	23,762.8
Manitoba	11,861.0	..	31,964.6	37,263.7	36,883.4	38,303.9	35,311.7	34,522.0
Saskatchewan	14,981.3	..	55,258.5	81,250.3	76,545.5	100,156.2	99,085.5	108,908.6
Alberta	22,593.6	..	55,051.7	68,548.8	63,498.8	70,314.3	67,000.2	69,652.3
British Columbia	1,295.2	..	3,621.0	3,741.9	3,309.4	3,613.2	3,464.9	3,314.4

Source(s): Statistics Canada, CANSIM table 153-0039.

Table 3.11

Manure production by major drainage area and sub-drainage area, 2006

	Drainage area	Manure production [1]	Phosphorous production	Nitrogen production
	code	tonnes		
Canada	**...**	**180,959,835**	**303,194**	**1,097,790**
Maritime provinces	**01**	**4,371,656**	**7,304**	**27,216**
Saint John and Southern Bay of Fundy	01A	1,069,692	1,836	6,805
Gulf of St. Lawrence and Northern Bay of Fundy	01B	703,204	1,070	4,153
Prince Edward Island	01C	1,109,528	1,792	6,564
Bay of Fundy and Gulf of St. Lawrence	01D	1,287,981	2,262	8,402
Southeastern Atlantic Ocean	01E	116,159	208	775
Cape Breton Island	01F	85,092	135	516
St. Lawrence	**02**	**50,472,230**	**88,298**	**316,063**
Northwestern Lake Superior	02A	104,034	146	596
Northeastern Lake Superior	02B	2,577	4	15
Northern Lake Huron	02C	319,638	497	1,880
Wanapitei and French	02D	138,580	209	811
Eastern Georgian Bay	02E	1,610,709	2,630	9,834
Eastern Lake Huron	02F	8,087,445	14,745	51,221
Northern Lake Erie	02G	9,527,597	18,246	62,506
Lake Ontario and Niagara Peninsula	02H	4,018,577	6,930	25,858
Upper Ottawa	02J	687,343	1,024	4,005
Central Ottawa	02K	1,382,948	2,096	8,037
Lower Ottawa	02L	3,319,481	4,871	19,374
Upper St. Lawrence	02M	1,101,340	1,730	6,661
Saint-Maurice	02N	36,760	62	240
Central St. Lawrence	02O	11,007,008	19,936	69,836
Lower St. Lawrence	02P	7,112,078	12,149	43,214
Northern Gaspé Peninsula	02Q	979,900	1,507	5,886
Saguenay	02R	853,825	1,217	4,922
Betsiamites, coast	02S	15,777	24	91
Manicouagan and aux Outardes	02T	245	0	1
Gulf of St. Lawrence, Natashquan	02W	4,427	7	26
Northern Newfoundland	02Y	71,362	105	426
Southern Newfoundland	02Z	90,579	162	622
Northern Quebec and Labrador	**03**	**30,434**	**45**	**175**
Nottaway, coast	03A	30,434	45	175
Southwestern Hudson Bay	**04**	**496,778**	**783**	**2,952**
Missinaibi and Mattagami	04L	4,063	6	24
Abitibi	04M	378,516	590	2,223
Harricanaw, coast	04N	114,199	187	706
Nelson River	**05**	**100,828,505**	**166,283**	**601,411**
Upper South Saskatchewan	05A	13,448,966	21,884	79,867
Bow	05B	5,308,696	8,553	31,387
Red Deer	05C	14,460,039	23,533	85,799
Upper North Saskatchewan	05D	2,355,960	3,749	13,948
Central North Saskatchewan	05E	8,830,882	14,266	52,568
Battle	05F	8,261,766	13,459	49,175
Lower North Saskatchewan	05G	5,425,057	8,876	32,199
Lower South Saskatchewan	05H	6,122,666	10,086	36,606
Qu'Appelle	05J	8,083,721	13,131	47,928
Saskatchewan	05K	1,412,850	2,361	8,406
Lake Winnipegosis and Lake Manitoba	05L	6,537,705	10,651	38,748
Assiniboine	05M	7,456,281	12,447	44,600
Souris	05N	5,776,678	9,298	34,042
Red	05O	5,865,334	11,448	37,197
Winnipeg	05P	432,712	736	2,626
English	05Q	19,235	30	113
Western Lake Winnipeg	05S	1,029,957	1,775	6,204
Western and Northern Hudson Bay	**06**	**3,021,646**	**4,795**	**17,754**
Beaver, Albertta and Saskatchewan	06A	3,021,646	4,795	17,754
Great Slave Lake	**07**	**10,411,422**	**16,720**	**61,543**
Upper Athabasca	07A	453,687	711	2,657
Central Athabasca, upper	07B	4,193,751	6,756	24,792
Central Athabasca, lower	07C	616,182	993	3,662
Upper Peace	07F	2,669,783	4,276	15,749
Smoky	07G	1,793,861	2,904	10,656
Central Peace, upper	07H	518,076	815	3,043
Central Peace, lower	07J	166,083	265	984

See notes at the end of the table.

Table 3.11 – continued

Manure production by major drainage area and sub-drainage area, 2006

	Drainage area	Manure production [1]	Phosphorous production	Nitrogen production
	code	tonnes		
Pacific	**08**	**7,948,004**	**13,552**	**50,743**
Skeena, coast	08E	207,132	321	1,213
Central coastal waters	08F	44,438	70	261
Southern coastal waters	08G	15,109	36	129
Vancouver Island	08H	410,744	659	2,592
Nechako	08J	611,095	964	3,591
Upper Fraser	08K	593,778	947	3,526
Thompson	08L	1,780,808	2,832	10,670
Lower Fraser	08M	3,241,731	6,060	22,501
Columbia	08N	1,043,169	1,662	6,260
Arctic	10	16,294	26	96
Fort Nelson	10C	16,294	26	96
Mississippi River	**11**	**3,215,375**	**5,158**	**18,946**
Missouri	11A	3,215,375	5,158	18,946
Islands and other unallocated areas		147,491	230	892

1. Livestock manure includes urine and feces from beef cows, heifers, milk cows, bulls, steers, calves, horses, sheep, lambs, goats, grower/finishing pigs, nursing/weaner pigs, sows, boars, steers, broilers/roasters, laying hens, pullets and turkeys. Other livestock in Canada , such as buffalo, deer, and rabbits, were not included in this analysis because their overall contribution to total manure produced is small and agreement on manure production coefficients has not been reached.

Note(s): A sub-drainage area, also called a watershed or drainage basin, is an area where all contributing surface waters share the same drainage outlet. Drainage areas channel runoff from precipitation and snow melt into stream flow. The resulting hierarchy of streams and rivers and their associated sub-drainage areas form the National Hydrological Network of Canada. There are 11 major drainage areas and 164 sub-drainage areas in Canada. Canada's entire land and fresh water area has been allocated to individual drainage areas.

Source(s): Statistics Canada, CANSIM table 153-0040.

Table 3.12

Area of farmland treated with herbicides by province, selected years

	1981	1986	1991	1996	2001	2006
	square kilometres					
Canada	**152,204.1**	**229,490.5**	**215,985.1**	**232,646.9**	**259,009.1**	**248,202.1**
Newfoundland and Labrador	5.0	6.7	5.7	7.0	10.7	15.8
Prince Edward Island	817.9	855.7	737.8	913.7	927.3	877.0
Nova Scotia	208.6	247.5	223.8	266.2	296.9	285.2
New Brunswick	402.0	458.0	398.6	454.0	540.2	551.5
Quebec	4,008.3	5,412.5	5,643.3	6,400.7	8,482.2	8,769.7
Ontario	19,236.2	20,157.6	17,914.8	19,951.0	22,089.8	21,989.8
Manitoba	25,279.2	35,853.7	32,631.8	34,217.0	35,660.2	32,095.2
Saskatchewan	53,437.3	104,361.9	100,458.5	108,512.9	123,269.8	117,903.5
Alberta	47,598.0	60,725.3	56,705.9	60,496.8	66,239.5	64,175.4
British Columbia	1,211.5	1,411.7	1,264.7	1,427.7	1,492.6	1,539.0

Note(s): The data for land management practices are reported for the year preceding the census year. Since 1996, the area of land that was treated with herbicides, insecticides and fungicides was under-reported. Some respondents reported chemical expenses but not any corresponding areas to which these chemicals were applied. Telephone follow-up with a sample of these respondents confirmed that some respondents had mistakenly reported for the current year instead of the previous year as requested and, when they completed their questionnaires for 1996 to 2006, the chemicals purchased had not yet been applied.

Source(s): Statistics Canada, Agriculture Division, 2007, *Selected Historical Data from the Census of Agriculture*, Catalogue no. 95-632-X.

Table 3.13
Area of farmland treated with insecticides by province, selected years

	1996	2001	2006
	square kilometres		
Canada	**29,351.4**	**22,259.4**	**23,943.8**
Newfoundland and Labrador	4.9	6.4	5.3
Prince Edward Island	469.0	452.6	401.6
Nova Scotia	116.7	161.8	121.5
New Brunswick	261.9	291.2	288.3
Quebec	849.1	904.2	977.9
Ontario	3,718.2	3,608.2	5,098.0
Manitoba	6,142.1	3,823.3	3,967.3
Saskatchewan	14,530.5	9,304.8	7,852.4
Alberta	2,995.6	3,429.0	4,932.3
British Columbia	263.5	277.9	299.2

Note(s): The data for land management practices are reported for the year preceding the census year. Since 1996, the area of land that was treated with herbicides, insecticides and fungicides was under-reported. Some respondents reported chemical expenses but not any corresponding areas to which these chemicals were applied. Telephone follow-up with a sample of these respondents confirmed that some respondents had mistakenly reported for the current year instead of the previous year as requested and, when they completed their questionnaires for 1996 to 2006, the chemicals purchased had not yet been applied. The data since 1996 pertain to the area of land on which only insecticides were used. The 1996 to 2006 questionnaires had two separate questions on the area of land on which insecticides were used and the area on which fungicides were used. In 1981, 1986 and 1991, however, a single question asked for the area on which insecticides and fungicides were applied to the same land. Therefore, the sum of responses to the 1996 to 2006 questions is not comparable to responses to the single question in previous censuses.

Source(s): Statistics Canada, Agriculture Division, 2007, *Selected Historical Data from the Census of Agriculture*, Catalogue no. 95-632-X.

Table 3.14
Top ten substances released to land, 2009

	Releases [1]	Share of total
	tonnes	percent
Manganese (and its compounds)	193,102.9	20.7
Hydrogen sulphide	186,831.8	20.1
Total Reduced Sulphur (TRS)	137,024.4	14.7
Phosphorous (total)	97,864.1	10.5
Zinc (and its compounds)	66,051.9	7.1
Copper (and its compounds)	63,489.1	6.8
Nickel (and its compounds)	36,991.0	4.0
Lead (and its compounds)	31,192.0	3.3
Asbestos (friable form)	18,641.1	2.0
Arsenic (and its compounds)	16,760.5	1.8

1. Data include disposals.

Source(s): Environment Canada, Pollution Data Branch, 2010, *National Pollutant Release Inventory (NPRI) Downloadable Datasets*, *www.ec.gc.ca/inrp-npri/default.asp?lang=en&n=0EC58C98-* (accessed December 21, 2010).

Table 3.15
Water yield per capita by drainage region, 1976 and 2006

	Drainage region	Population				Water yield per capita 2006 [1]
		1976	2006	Change 1976 to 2006	Density 2006	
	code	persons		percent	persons per square kilometre	cubic metres per person
Canada	**...**	**22,992,603**	**31,612,897**	**27.3**	**3.6**	**109,837**
Pacific Coastal	1	980,269	1,437,391	31.8	4.5	357,393
Fraser–Lower Mainland	2	1,130,068	2,144,661	47.3	9.6	59,950
Okanagan–Similkameen	3	161,142	305,011	47.2	20.3	13,832
Columbia	4	142,607	156,987	9.2	1.8	431,425
Yukon	5	20,728	28,706	27.8	0.1	3,691,180
Peace–Athabasca	6	232,736	375,036	37.9	0.8	266,457
Lower Mackenzie	7	40,639	53,973	24.7	0.0	4,563,560
Arctic Coast–Islands	8	8,991	18,358	51.0	0.0	12,599,851
Missouri	9	12,718	8,869	-43.4	0.3	56,683
North Saskatchewan	10	924,402	1,416,072	34.7	9.9	7,183
South Saskatchewan	11	1,058,505	1,953,874	45.8	11.4	4,909
Assiniboine–Red	12	1,282,763	1,383,937	7.3	7.6	4,964
Winnipeg	13	85,961	84,757	-1.4	1.0	299,422
Lower Saskatchewan–Nelson	14	229,470	215,255	-6.6	0.7	221,310
Churchill	15	63,951	88,638	27.9	0.3	557,622
Keewatin–Southern Baffin Island	16	5,997	13,261	54.8	0.0	14,476,588
Northern Ontario	17	150,768	137,806	-9.4	0.2	1,445,735
Northern Quebec	18	96,690	105,401	8.3	0.1	4,898,872
Great Lakes	19	7,174,755	10,695,503	32.9	51.8	12,442
Ottawa	20	1,270,448	1,828,878	30.5	13.9	34,244
St. Lawrence	21	5,076,416	6,248,199	18.8	58.8	11,410
North Shore–Gaspé	22	519,419	508,069	-2.2	1.5	575,060
Saint John–St. Croix	23	379,612	402,583	5.7	10.0	72,580
Maritime Coastal	24	1,384,759	1,494,940	7.4	13.0	69,305
Newfoundland–Labrador	25	558,789	506,732	-10.3	1.6	642,178

1. The water yield estimates are 34-year annual averages (1971 to 2004), with the exception of those estimates for drainage regions 5, 7, 16, 17, 18 and the Labrador portion of 25 which are based on 20 years of data (1975 to 1996); and drainage region 8 which is based on a 23-year annual average (1972-1994) for the Arctic Archipelago (Spence and Buke 2008), and on a 20-year annual average (1975 to 1996) for the remaining area.

Note(s): Data were derived from discharge values contained in Environment Canada, 2010, Water Survey of Canada, *Archived Hydrometric Data (HYDAT)* (*www.wsc.ec.gc.ca/applications/H2O/index-eng.cfm*).

Source(s): Spence C., and A. Burke, 2008, "Estimates of Canadian Arctic Archipelago Runoff from Observed Hydrometric Data," *Journal of Hydrology*, Vol. 362, pages 247 to 259. Statistics Canada, Environment Accounts and Statistics Division, 2010, special tabulation.

Table 3.16
Water use in Canada, by sector, 2005

	Public utility water system	Self-supplied water system	Total	Share of total water use
	millions of cubic metres			percent
Total, all sectors	**5,706.2**	**36,352.1**	**42,058.3**	**100.0**
Thermal-electric power generation	X	X	27,825.1	66.2
Manufacturing	618.5	5,101.0	5,719.5	13.6
Residential [1]	3,195.5	575.6	3,771.1	9.0
Agriculture				
Irrigation [2]		1,631.7	1,631.7	3.9
Livestock [3]		321.3	321.3	0.8
Commercial and institutional [4]	1,127.8		1,127.8	2.7
Water treatment and distribution systems [5]	X	X	981.9	2.3
Mining (except oil and gas)	7.5	448.4	456.0	1.1
Oil and gas extraction		224.0	224.0	0.5

1. Includes an estimate for residential use of water produced by drinking water plants and for well water.
2. Data for all provinces except Alberta are from the 2007 Agricultural Water Use Survey. Alberta values are based on data reported by Alberta Agriculture and Rural Development and have been adjusted for uses other than irrigation, transportation losses and other sources of water for irrigation.
3. Sources for livestock data are documented in Statistics Canada, 2010, "Freshwater supply and demand in Canada," *Human Activity and the Environment*, Catalogue no. 16-201-X, Table 3.5.
4. Estimated using the volume of water produced by drinking water plants in Canada and subtracting municipal water intake estimates for industrial use, the residential water intake estimate, and losses.
5. Includes an estimate for water use and leakages by water treatment and distribution systems.

Note(s): Water use is defined as water intake. Figures may not add up to totals due to rounding.

Source(s): Alberta Agriculture and Rural Development, Water Resources Branch, Irrigation and Farm Water Division, 2009, *Alberta Irrigation Information Facts and Figures for the Year 2008*. Canadian Association of Petroleum Producers, personal communication, 2009. Environment Canada, 2007, *Municipal Water Use: 2004 Statistics*, Ottawa. Statistics Canada, 2008, *Industrial Water Survey, 2005*, Catalogue no. 16-401-X. Statistics Canada, 2009, *Survey of Drinking Water Plants, 2005 to 2007*, Catalogue no. 16-403-X. Statistics Canada, 2009, "Agricultural Water Use Survey 2007, Methodology Report," *Environment Accounts and Statistics Analytical and Technical Paper Series*, Catalogue no. 16-001-M2009008.

Table 3.17

Population served by drinking water plants, by source water type and province and territory

	Surface water			Groundwater		
	2005	2006	2007	2005	2006	2007
	number					
Canada [1]	**23,486,082**	**23,686,820**	**23,998,655**	**3,256,474**	**3,310,860**	**3,388,934**
Newfoundland and Labrador	403,648	376,474	379,389	x	x	x
Prince Edward Island	0	0	0	60,074	60,427	60,827
Nova Scotia	388,597	389,349	394,879	58,792	59,346	60,511
New Brunswick	212,201	211,736	211,379	110,662	112,921	112,996
Quebec	5,844,932	5,875,002	5,949,804	847,364	853,493	867,892
Ontario	9,163,966	9,227,654	9,317,774	1,302,012	1,330,022	1,360,863
Manitoba	822,161	824,490	829,138	84,266	88,707	89,808
Saskatchewan	593,140	594,027	595,078	133,356	131,663	132,394
Alberta	2,581,365	2,659,175	2,751,250	120,235	124,929	130,034
British Columbia	3,425,700	3,480,251	3,526,439	514,244	521,223	538,906
Yukon and Northwest Territories	50,372	48,662	43,525	x	x	x

	Groundwater under the direct influence of surface water			Total		
	2005	2006	2007	2005	2006	2007
	number					
Canada [1]	**436,749**	**445,864**	**456,017**	**27,197,110**	**27,452,621**	**27,856,304**
Newfoundland and Labrador	x	x	x	429,494	402,690	406,364
Prince Edward Island	0	0	0	60,074	60,427	60,827
Nova Scotia	0	0	0	447,389	448,695	455,390
New Brunswick	28,214	28,254	28,265	351,077	352,912	352,640
Quebec	172,299	177,225	186,798	6,873,823	6,914,798	7,016,273
Ontario	123,763	127,835	125,493	10,595,652	10,685,510	10,805,048
Manitoba	6,475	7,071	7,483	915,568	920,268	926,429
Saskatchewan	7,168	7,579	8,793	733,665	733,269	736,265
Alberta	20,183	19,407	20,151	2,721,782	2,803,511	2,901,434
British Columbia	60,721	60,548	61,058	4,000,665	4,062,022	4,126,403
Yukon and Northwest Territories	x	x	x	67,919	68,520	69,230

1. Excludes Nunavut due to low response.

Note(s): Figures may not add up to totals due to rounding.

Source(s): Statistics Canada, 2009, *Survey of Drinking Water Plants, 2005 to 2007*, Catalogue no. 16-403-X.

Table 3.18

Population served by drinking water plants, by source water type and drainage region

	Drainage region	Surface water			Groundwater		
		2005	2006	2007	2005	2006	2007
	code	number					
Canada [1]	...	**23,486,082**	**23,686,820**	**23,998,655**	**3,256,474**	**3,310,860**	**3,388,934**
Pacific Coastal and Yukon [2]	1,5	2,315,837	2,345,382	2,371,455	175,888	177,901	185,734
Fraser–Lower Mainland [3]	2	801,593	817,507	825,720	x	x	x
Okanagan–Similkameen	3	188,894	194,989	201,328	30,335	30,286	32,828
Columbia	4	106,501	107,191	106,860	35,688	38,045	38,859
Peace–Athabasca and Lower Mackenzie	7	259,084	270,212	277,209	x	x	x
Missouri	9	x	x	x	x	x	x
North Saskatchewan	10	1,026,825	1,040,495	1,057,460	53,638	54,586	55,243
South Saskatchewan	11	1,606,728	1,660,912	1,730,482	82,825	87,879	92,207
Assiniboine–Red	12	1,032,054	1,034,466	1,038,519	138,473	137,900	139,541
Winnipeg, Lower Saskatchewan–Nelson, Churchill and Northern Ontario	13,14,15,17	216,610	216,819	217,058	71,975	74,713	73,441
Northern Quebec	18	F	x	x	x	x	x
Great Lakes	19	8,149,639	8,200,928	8,280,934	1,230,896	1,258,473	1,288,214
Ottawa	20	1,522,329	1,542,946	1,558,968	96,021	98,579	102,607
St. Lawrence	21	4,906,941	4,907,286	4,945,360	557,383	559,804	575,411
North Shore–Gaspé	22	305,203	325,722	356,107	x	151,113	149,114
Saint John–St. Croix	23	33,544	33,534	33,561	83,732	84,827	84,904
Maritime Coastal	24	606,951	607,245	612,426	174,099	176,168	177,730
Newfoundland–Labrador	25	403,648	376,474	379,389	x	x	x

	Drainage region	Groundwater under the direct influence of surface water			Total		
		2005	2006	2007	2005	2006	2007
	code	number					
Canada [1]	...	**436,749**	**445,864**	**456,017**	**27,197,110**	**27,452,621**	**27,856,304**
Pacific Coastal and Yukon [2]	5	36,570	36,632	37,050	2,528,295	2,559,915	2,594,238
Fraser–Lower Mainland [3]	2	x	x	x	1,078,230	1,099,089	1,119,612
Okanagan–Similkameen	3	4,733	4,469	4,348	223,962	229,744	238,504
Columbia	4	0	0	0	142,189	145,236	145,719
Peace–Athabasca and Lower Mackenzie	7	x	x	x	317,200	327,692	335,192
Missouri	9	0	0	0	4,110	3,984	4,004
North Saskatchewan	10	4,766	4,789	4,869	1,085,229	1,099,870	1,117,572
South Saskatchewan	11	19,805	19,086	19,830	1,709,358	1,767,877	1,842,519
Assiniboine–Red	12	8,733	9,694	11,241	1,179,259	1,182,060	1,189,301
Winnipeg, Lower Saskatchewan–Nelson, Churchill and Northern Ontario	13,14,15,17	4,025	3,990	3,990	295,277	295,522	294,489
Northern Quebec	18	0	0	0	44,751	53,430	53,701
Great Lakes	19	121,682	125,727	123,369	9,508,127	9,585,127	9,693,436
Ottawa	20	11,362	13,191	13,207	1,633,009	1,654,716	1,674,782
St. Lawrence	21	155,429	156,770	166,290	5,619,753	5,632,938	5,698,840
North Shore–Gaspé	22	x	4,469	4,523	470,927	481,304	509,744
Saint John–St. Croix	23	26,604	26,670	26,682	143,880	145,030	145,147
Maritime Coastal	24	3,010	2,984	2,983	784,059	786,398	793,139
Newfoundland–Labrador	25	x	x	x	429,494	402,690	406,364

1. Excludes Arctic Coast–Islands and Keewatin–Southern Baffin Island due to low response.
2. Overestimated because some plants located here serve Fraser–Lower Mainland.
3. Underestimated because some of the population is served by plants located in Pacific Coastal.

Note(s): Figures may not add up to totals due to rounding. The drainage regions in this table are shown in Map 1.3.
Source(s): Statistics Canada, 2009, *Survey of Drinking Water Plants, 2005 to 2007*, Catalogue no. 16-403-X.

Table 3.19

Raw water volumes processed by drinking water plants, by source water type and province and territory

	Surface water			Groundwater		
	2005	2006	2007	2005	2006	2007
	millions of cubic metres					
Canada [1]	**5,263.8**	**5,141.4**	**5,186.3**	**588.6**	**587.1**	**595.2**
Newfoundland and Labrador	144.8	129.9	132.0	x	x	x
Prince Edward Island	0.0	0.0	0.0	9.9	10.0	10.0
Nova Scotia	103.8	100.7	101.6	11.6	11.4	12.7
New Brunswick	81.4	78.9	79.7	26.1	25.1	25.5
Quebec	1,734.7	1,651.0	1,697.4	150.4	147.9	150.9
Ontario	1,771.8	1,717.2	1,732.7	189.9	189.5	192.1
Manitoba	106.6	110.3	106.3	11.8	13.1	12.6
Saskatchewan	108.3	115.3	113.8	22.0	22.0	21.8
Alberta	462.7	475.9	485.4	23.8	24.7	25.2
British Columbia	741.8	754.9	731.1	134.5	134.6	134.5
Yukon and Northwest Territories	7.8	7.4	6.2	x	x	x

	Groundwater under the direct influence of surface water			Total		
	2005	2006	2007	2005	2006	2007
	millions of cubic metres					
Canada [1]	**93.9**	**93.7**	**96.5**	**5,946.3**	**5,822.2**	**5,878.0**
Newfoundland and Labrador	x	x	x	157.6	142.6	144.7
Prince Edward Island	0.0	0.0	0.0	9.9	10.0	10.0
Nova Scotia	0.0	0.0	0.0	115.4	112.1	114.2
New Brunswick	5.0	4.9	4.9	112.6	109.0	110.1
Quebec	32.5	32.6	35.4	1,917.6	1,831.5	1,883.7
Ontario	17.8	17.6	17.7	1,979.4	1,924.3	1,942.6
Manitoba	1.2	1.3	1.5	119.6	124.7	120.5
Saskatchewan	1.0	1.1	1.3	131.4	138.4	136.9
Alberta	7.3	6.8	6.8	493.7	507.4	517.4
British Columbia	20.3	20.3	19.8	896.6	909.8	885.5
Yukon and Northwest Territories	x	x	x	12.4	12.4	12.4

1. Excludes Nunavut due to low response.

Note(s): Figures may not add up to totals due to rounding.

Source(s): Statistics Canada, 2009, *Survey of Drinking Water Plants, 2005 to 2007*, Catalogue no. 16-403-X.

Table 3.20

Raw water volumes processed by drinking water plants, by source water type and drainage region

	Drainage region	Surface water			Groundwater		
		2005	2006	2007	2005	2006	2007
	code	millions of cubic metres					
Canada [1]	**...**	**5,263.8**	**5,141.4**	**5,186.3**	**588.6**	**587.1**	**595.2**
Pacific Coastal and Yukon	1,5	414.7	428.1	360.8	48.7	48.2	48.4
Fraser–Lower Mainland	2	198.9	195.9	236.5	x	x	x
Okanagan–Similkameen	3	87.8	89.4	92.2	10.8	10.9	12.1
Columbia	4	36.9	37.1	36.6	17.6	F	F
Peace–Athabasca and Lower Mackenzie	6,7	45.1	47.3	47.7	x	x	x
Missouri	9	x	x	x	x	0.3	0.3
North Saskatchewan	10	151.2	156.6	160.4	8.6	x	x
South Saskatchewan	11	329.0	338.5	342.1	17.9	18.6	19.1
Assiniboine–Red	12	140.0	146.2	142.3	21.4	22.2	21.6
Winnipeg, Lower Saskatchewan–Nelson, Churchill and Northern Ontario	13,14,15,17	42.2	42.7	42.2	12.2	13.3	11.8
Northern Quebec	18	F	x	x	9.4	13.6	14.5
Great Lakes	19	1,579.5	1,531.6	1,556.6	177.3	176.4	180.5
Ottawa	20	342.3	334.6	330.4	17.9	17.5	17.4
St. Lawrence	21	1,486.2	1,405.0	1,442.2	90.9	86.5	88.9
North Shore–Gaspé	22	67.7	68.4	71.1	x	31.4	31.2
Saint John–St. Croix	23	x	8.0	8.2	19.5	19.1	19.3
Maritime Coastal	24	187.9	180.9	183.0	32.4	31.5	32.9
Newfoundland–Labrador	25	144.8	129.9	132.0	5.1	5.0	4.8

	Drainage region	Groundwater under the direct influence of surface water			Total		
		2005	2006	2007	2005	2006	2007
	code	millions of cubic metres					
Canada [1]	**...**	**93.9**	**93.7**	**96.5**	**5,946.3**	**5,822.2**	**5,878.0**
Pacific Coastal and Yukon	1,5	9.4	10.1	9.4	472.8	486.4	418.7
Fraser–Lower Mainland	2	x	x	x	260.8	264.3	305.0
Okanagan–Similkameen	3	6.1	5.1	5.8	104.8	105.5	110.1
Columbia	4	0.0	0.0	0.0	54.5	48.8	47.8
Peace–Athabasca and Lower Mackenzie	6,7	x	x	x	54.1	57.2	57.2
Missouri	9	0.0	0.0	0.0	1.1	x	x
North Saskatchewan	10	0.7	x	x	160.5	166.3	170.1
South Saskatchewan	11	7.2	6.7	6.7	354.1	363.9	367.9
Assiniboine–Red	12	1.5	1.7	2.0	162.9	170.0	165.9
Winnipeg, Lower Saskatchewan–Nelson, Churchill and Northern Ontario	13,14,15,17	0.9	0.8	0.8	55.3	56.8	54.8
Northern Quebec	18	0.0	0.0	0.0	F	x	x
Great Lakes	19	17.3	17.2	17.2	1,774.1	1,725.2	1,754.4
Ottawa	20	2.4	2.6	2.6	362.6	354.7	350.4
St. Lawrence	21	29.0	28.8	31.6	1,606.1	1,520.3	1,562.7
North Shore–Gaspé	22	x	0.6	0.6	101.5	100.5	102.9
Saint John–St. Croix	23	x	4.7	4.7	33.3	31.8	32.2
Maritime Coastal	24	0.5	0.5	0.5	220.8	212.9	216.4
Newfoundland–Labrador	25	7.7	7.7	7.9	157.6	142.6	144.7

1. Excludes Arctic Coast–Islands and Keewatin–Southern Baffin Island due to low response.

Note(s): Figures may not add up to totals due to rounding. The drainage regions in this table are shown in Map 1.3.

Source(s): Statistics Canada, 2009, *Survey of Drinking Water Plants, 2005 to 2007*, Catalogue no. 16-403-X.

Table 3.21
Top ten substances released to water, 2009

	Releases	Share of total
	tonnes	percent
Nitrate (ion in solution at pH >= 6.0)	55,723.6	47.1
Ammonia (total) [1]	51,209.7	43.3
Phosphorus (total)	6,053.4	5.1
Methanol	1,544.4	1.3
Manganese (and its compounds)	1,256.0	1.1
Ethylene glycol	762.1	0.6
Chlorine	303.2	0.3
Zinc (and its compounds)	219.4	0.2
Total Reduced Sulphur (TRS)	195.1	0.2
Benzene	136.0	0.1

1. Refers to the total of both ammonia (NH_3) and ammonium ion (NH_4+) in solution.

Source(s): Environment Canada, Pollution Data Branch, 2010, *National Pollutant Release Inventory (NPRI) Downloadable Datasets*, *www.ec.gc.ca/inrp-npri/default.asp?lang=en&n=0EC58C98-* (accessed December 21, 2010).

Table 3.22

General status of species in Canada, as reported by the National General Status Working Group

	Total	Extinct [1]	Extirpated [2]	At risk [3]	May be at risk [4]	Sensitive [5]	Secure [6]	Undetermined [7]	Not assessed [8]	Exotic [9]	Accidental [10]
	number										
2000											
Species total	**1,670**	**8**	**6**	**77**	**89**	**187**	**992**	**49**	**6**	**53**	**203**
Vertebrates											
Terrestrial mammals	167	0	1	5	9	24	108	6	1	11	2
Marine mammals	48	1	0	3	0	5	31	4	2	0	2
Birds	639	3	1	21	11	53	345	17	2	13	173
Freshwater fish	232	4	3	22	10	30	131	10	1	20	1
Amphibians	45	0	0	4	6	6	29	0	0	0	0
Terrestrial reptiles	42	0	0	9	2	11	18	1	0	1	0
Marine reptiles	4	0	0	1	0	1	0	0	0	0	2
Vascular Plants											
Ferns	122	0	0	3	18	20	79	0	0	2	0
Orchids	78	0	0	7	10	6	50	0	0	4	1
Invertebrates											
Butterflies	293	0	1	2	23	31	201	11	0	2	22
2005											
Species total	**7,732**	**5**	**30**	**206**	**634**	**657**	**3,541**	**534**	**465**	**1,254**	**406**
Vertebrates											
Mammals	218	1	1	13	10	25	139	11	0	11	7
Birds	653	3	1	27	12	41	358	5	0	11	195
Fishes	1,389	1	2	26	16	65	238	395	434	12	200
Amphibians	46	0	0	9	0	7	30	0	0	0	0
Reptiles	47	0	3	13	2	12	12	1	0	2	2
Vascular Plants											
Ferns	124	0	0	5	24	15	78	0	0	2	0
Orchids	76	0	1	8	5	10	49	0	0	3	0
Other	4,874	0	21	97	523	435	2,445	112	30	1,211	0
Invertebrates											
Freshwater Mussels	55	0	1	8	9	15	19	2	1	0	0
Crayfish	11	0	0	0	0	2	7	0	0	2	0
Odonates	209	0	0	0	28	27	145	7	0	0	2
Tiger Beetles	30	0	0	0	5	3	21	1	0	0	0

See notes at the end of the table.

Table 3.22 – continued

General status of species in Canada, as reported by the National General Status Working Group

	Total	Extinct [1]	Extirpated [2]	At risk [3]	May be at risk [4]	Sensitive [5]	Secure [6]	Undetermined [7]	Not assessed [8]	Exotic [9]	Accidental [10]
	number										
2010											
Species total	**11,950**	**5**	**35**	**247**	**806**	**960**	**6,600**	**1,586**	**32**	**1,426**	**253**
Vertebrates											
Mammals	218	1	1	12	11	29	135	11	0	11	7
Birds	664	3	1	37	12	49	344	4	0	11	203
Amphibians	47	0	1	9	0	6	31	0	0	0	0
Reptiles	48	0	3	17	0	10	13	1	0	2	2
Lichens	861	0	1	5	100	68	468	211	7	1	0
Mosses	1,006	1	1	10	71	103	581	235	0	4	0
Vascular Plants	5,111	0	25	136	444	484	2,635	112	23	1,252	0
Invertebrates											
Freshwater Mussels	54	0	1	12	6	13	20	2	0	0	0
Crayfishes	11	0	0	0	0	2	7	0	0	2	0
Spiders	1,379	0	0	0	62	56	714	477	0	70	0
Odonates	211	0	0	1	22	20	155	11	0	0	2
Predaceous diving beetles	275	0	0	0	2	3	206	64	0	0	0
Ground beetles	934	0	0	3	36	36	545	260	0	54	0
Lady beetles	166	0	0	0	0	15	77	66	1	7	0
Bumblebees	41	0	0	0	1	0	15	25	0	0	0
Black flies	162	0	0	0	0	12	116	34	0	0	0
Horse flies	144	0	0	0	11	7	103	23	0	0	0
Mosquitoes	80	0	0	0	0	3	63	11	0	3	0
Selected macromoths	236	0	0	1	9	20	155	29	0	7	15
Butterflies	302	0	1	4	19	24	217	10	1	2	24

1. Species that are extirpated worldwide (that is, they no longer exist anywhere).
2. Species that are no longer present in a given geographic area, but occur in other areas.
3. Species for which a formal, detailed risk assessment (COSEWIC status assessment or provincial or territorial equivalent) has been completed and that have been determined to be at risk of extirpation or extinction (that is Endangered or Threatened). A COSEWIC designation of Endangered or Threatened automatically results in a Canada General Status Rank (Canada rank) of At risk. Where a provincial or territorial formal risk assessment finds a species to be Endangered or Threatened in that particular region, then, under the general status program, the species automatically receives a provincial or territorial general status rank of At risk.
4. Species that may be at risk of extirpation or extinction and are therefore candidates for a detailed risk assessment by COSEWIC, or provincial or territorial equivalents.
5. Species that are not believed to be at risk of immediate extirpation or extinction but may require special attention or protection to prevent them from becoming at risk.
6. Species that are not believed to belong in the categories Extirpated, Extinct, At risk, May be at risk, Sensitive, Accidental or Exotic. This category includes some species that show a trend of decline in numbers in Canada but remain relatively widespread or abundant.
7. Species for which insufficient data, information, or knowledge is available with which to reliably evaluate their general status.
8. Species that are known or believed to be present regularly in the geographic area in Canada to which the rank applies, but have not yet been assessed by the general status program.
9. Species that have been moved beyond their natural range as a result of human activity. In this report, Exotic species have been purposefully excluded from all other categories.
10. Species occurring infrequently and unpredictably, outside their usual range.

Source(s): Canadian Endangered Species Conservation Council (CESCC), 2011, *Wild Species 2010: The General Status of Species in Canada*, National General Status Working Group. Canadian Endangered Species Conservation Council (CESCC), 2006, *Wild Species 2005: The General Status of Species in Canada*, National General Status Working Group. Canadian Endangered Species Conservation Council (CESCC), 2001, *Wild Species 2000: The General Status of Species in Canada*, Minister of Public Works and Government Services Canada, Ottawa.

Table 3.23

Wildlife species extinct and at risk in Canada, as reported by the Committee on the Status of Endangered Wildlife in Canada, 2010

	Assessment of the Committee on the Status of Endangered Wildlife in Canada					Total
	Extinct [1]	Extirpated [2]	Endangered [3]	Threatened [4]	Special concern [5]	
	number					
Total	**13**	**23**	**262**	**151**	**166**	**615**
Mammals	2	3	20	17	27	69
Birds	3	2	28	23	22	78
Fishes	6	4	42	32	43	127
Amphibians	0	1	8	5	7	21
Reptiles	0	4	16	12	9	41
Molluscs	1	2	17	3	7	30
Arthropods [6]	0	3	24	6	5	38
Vascular plants	0	3	96	48	37	184
Lichens	0	0	4	2	5	11
Mosses	1	1	7	3	4	16

1. A wildlife species that no longer exists.
2. A wildlife species that no longer exists in the wild in Canada, but exists elsewhere.
3. A wildlife species facing imminent extirpation or extinction.
4. A wildlife species that is likely to become endangered if nothing is done to reverse the factors leading to its extirpation or extinction.
5. A wildlife species that may become threatened or endangered because of a combination of biological characteristics and identified threats.
6. Formerly described as lepidopterans.

Source(s): Committee on the Status of Endangered Wildlife in Canada, 2010, *Canadian Wildlife Species at Risk*, *www.cosewic.gc.ca/eng/sct0/rpt/dsp_booklet_e.htm* (accessed December 13, 2010).

Table 3.24
Legal protection of wildlife species in Canada under the *Species at Risk Act*[1]

	Species risk status							
	Extirpated				Endangered			
	Assessment not yet forwarded to Minister of the Environment	Under consideration[2]	Listed[3]	Not listed[3]	Assessment not yet forwarded to Minister of the Environment	Under consideration[2]	Listed[3]	Not listed[3]
	number							
Total	**1**	**1**	**22**	**0**	**20**	**40**	**220**	**9**
Mammals (terrestrial)	0	0	2	0	0	0	11	0
Mammals (marine)	0	0	2	0	0	1	7	2
Birds	0	0	2	0	4	1	27	0
Fish	0	1	2	0	6	16	24	7
Amphibians	0	0	1	0	1	1	7	0
Reptiles	1	0	4	0	1	2	14	0
Molluscs (terrestrial)	0	0	1	0	0	0	2	0
Molluscs (aquatic)	0	0	1	0	1	6	10	0
Arthropods	0	0	3	0	1	6	18	0
Vascular plants	0	0	3	0	5	5	91	0
Lichens	0	0	0	0	0	2	2	0
Mosses	0	0	1	0	1	0	7	0

	Species risk status							
	Threatened				Special concern			
	Assessment not yet forwarded to Minister of the Environment	Under consideration[2]	Listed[3]	Not listed[3]	Assessment not yet forwarded to Minister of the Environment	Under consideration[2]	Listed[3]	Not listed[3]
	number							
Total	**8**	**24**	**128**	**7**	**13**	**32**	**116**	**7**
Mammals (terrestrial)	1	1	7	1	2	1	10	2
Mammals (marine)	1	1	5	2	0	6	7	2
Birds	1	4	20	0	0	4	19	0
Fish	2	16	13	4	8	14	22	2
Amphibians	0	0	6	0	0	0	7	0
Reptiles	0	0	13	0	0	0	9	0
Molluscs (terrestrial)	0	0	1	0	0	1	1	0
Molluscs (aquatic)	0	2	1	0	0	2	3	0
Arthropods	0	0	6	0	0	0	5	0
Vascular plants	2	0	51	0	2	3	26	0
Lichens	1	0	2	0	1	1	3	1
Mosses	0	0	3	0	0	0	4	0

1. As of March 31, 2011.
2. Does not include species that are already on Schedule 1 and are currently having the confirmation of their status considered.
3. Only species listed on Schedule 1 of the *Species at Risk Act* (SARA) receive legal protection. This legal protection varies depending on species status, the types of species and the jurisdiction in which the species is found. The general prohibitions of SARA do not apply to species of special concern. Please see the *Species at Risk Act* for more information (*http://laws-lois.justice.gc.ca/eng/acts/S-15.3/index.html*).

Source(s): Environment Canada, Population Conservation and Management Division, 2011, special tabulation. For more information please consult the SARA Public Registry, *www.sararegistry.gc.ca/default_e.cfm*.

Table 3.25
Wildlife species extinct and extirpated from Canada, 2010

Species	Group	Date of extinction or extirpation [1,2]	Probable cause(s) of extinction or extirpation [1,2]
Extinct [1]			
Benthic Hadley Lake stickleback	fishes (freshwater)	1999	introduced predators
Limnetic Hadley Lake stickleback	fishes (freshwater)	1999	introduced predators
Banff longnose dace	fishes (freshwater)	1986	introduced predators; habitat alteration
Blue walleye	fishes (freshwater)	1965	commercial fishing; introduced predators
Lake Ontario kiyi	fishes (freshwater)	1964	commercial fishing; introduced predators
Deepwater cisco	fishes (freshwater)	1952	commercial fishing; introduced predators
Eelgrass limpet	molluscs	1929	loss of food source
Caribou (*dawsoni* subspecies)	mammals (terrestrial)	1920s	unknown
Passenger Pigeon	birds	1914	hunting and predation
Sea mink	mammals (marine)	1894	trapping
Labrador Duck	birds	1875	hunting; habitat alteration
Macoun's shining moss	mosses	after 1864	habitat alteration
Great Auk	birds	1844	hunting
Extirpated [2]			
Karner blue	arthropods	1991	loss of food source; habitat alteration
Frosted elfin	arthropods	1988	successional change
Greater Prairie-Chicken	birds	after 1987	habitat alteration
Black-footed ferret	mammals (terrestrial)	1974	loss of food source
Striped bass (St. Lawrence Estuary population)	fishes (freshwater)	after 1968	illegal fishing
Dwarf wedgemussel	molluscs	1968	habitat alteration
Greater Sage-Grouse (*phaios* subspecies)	birds	1960s	hunting; habitat alteration
Pacific pond turtle	reptiles	after 1959	commercial harvesting; habitat alteration
Gravel chub	fishes (freshwater)	after 1958	habitat alteration
Pacific gophersnake	reptiles	after 1957	habitat alteration
Spring blue-eyed Mary	plants	after 1954	habitat alteration
Timber rattlesnake	reptiles	1941	hunting; habitat alteration
Oregon lupine	plants	after 1929	habitat alteration
Paddlefish	fishes (freshwater)	1917	habitat alteration; over-fishing
Tiger salamander (Great Lakes population)	amphibians	1915	habitat alteration
Island marble	arthropods	before 1910	loss of food source; habitat alteration
Puget Oregonian snail	molluscs	after 1905	unknown
Pygmy short-horned lizard	reptiles	after 1898	habitat alteration
Atlantic salmon (Lake Ontario population)	fishes (freshwater)	after 1898	habitat destruction and over-exploitation by a food and commercial fishery
Illinois tick-trefoil	plants	after 1888	habitat alteration
Grizzly bear (Prairie population)	mammals (terrestrial)	1880s	hunting
Incurved grizzled moss	mosses	1828	unknown
Grey whale (Atlantic population)	mammals (marine)	1800s	hunting

1. A wildlife species that no longer exists.
2. A wildlife species that no longer exists in the wild in Canada, but exists elsewhere.

Source(s): Committee on the Status of Endangered Wildlife in Canada, 2010, *Canadian Wildlife Species at Risk*, *www.cosewic.gc.ca/eng/sct0/rpt/dsp_booklet_e.htm* (accessed November 18, 2010).

Table 3.26
Harvest estimates for selected waterfowl species

	Canada Goose	Lesser Snow Goose	Mallard	American Black Duck	American Green-winged Teal	Northern Pintail
	number					
1975	358,177	106,819	1,730,981	307,360	201,827	216,969
1976	317,257	98,487	1,935,903	350,532	236,153	200,589
1977	333,273	101,991	1,557,130	356,496	271,921	191,921
1978	395,569	75,431	1,522,632	380,607	226,202	135,235
1979	416,667	140,795	1,609,618	319,804	161,270	145,622
1980	450,744	138,834	1,533,585	363,873	175,153	128,770
1981	360,969	127,390	1,296,941	321,987	176,127	110,995
1982	396,196	116,778	1,213,941	336,945	203,801	104,798
1983	469,552	169,086	1,327,609	309,139	162,941	101,795
1984	420,091	124,140	1,059,251	306,589	145,664	103,417
1985	452,498	155,360	911,076	299,762	196,599	91,110
1986	453,834	92,074	879,125	296,081	172,010	59,988
1987	507,283	141,705	1,020,609	295,392	134,467	67,182
1988	395,673	113,112	668,554	300,228	145,286	69,357
1989	510,370	138,373	744,007	261,324	195,640	62,960
1990	501,660	102,152	734,613	243,009	200,012	71,637
1991	472,182	101,959	629,139	225,938	113,064	35,220
1992	380,469	58,852	579,810	206,511	99,105	33,417
1993	434,157	88,578	536,999	203,313	132,306	37,753
1994	414,220	102,257	625,412	175,459	126,837	44,442
1995	396,004	105,642	603,342	187,161	145,537	44,313
1996	500,105	92,271	641,090	163,601	93,534	52,697
1997	489,478	150,768	718,695	165,469	111,378	60,761
1998	531,353	155,495	663,919	158,379	124,693	59,854
1999	565,242	154,731	633,196	174,943	154,757	55,693
2000	612,056	122,725	676,376	154,918	116,458	56,431
2001	637,016	146,990	591,760	124,075	89,426	39,654
2002	645,664	130,477	546,594	122,642	111,754	57,038
2003	671,654	152,120	511,486	109,223	90,919	47,959
2004	626,801	105,433	523,728	91,764	71,720	59,950
2005	712,042	106,021	544,006	89,580	71,786	43,815
2006	678,011	165,416	613,626	104,030	69,828	46,517
2007	703,857	106,945	545,952	103,811	91,910	56,800
2008	735,005	158,311	547,720	103,497	88,169	50,920
2009	711,213	103,846	472,527	90,617	67,362	40,326

Source(s): Environment Canada, Canadian Wildlife Service, 2010, *Migratory Bird Populations*, *www.cws-scf.ec.gc.ca/harvest/hews_e.cfm* (accessed February 7, 2011).

Table 3.27
Pelts harvested by province and territory, 2008

	Canada	Newfoundland and Labrador	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario
	number						
Total wild-caught [1]	**741,769**	**19,207**	**3,755**	**27,720**	**41,056**	**205,044**	**166,383**
Badger	624	.	.	.	.	.	0
Bear	2,085	0	.	87	0	1,194	36
Beaver	151,313	1,625	421	4,842	10,123	44,202	48,533
Cougar	0	.	.	.	.	.	.
Coyote or prairie wolf	56,107	350	416	1,908	1,574	5,244	2,184
Ermine	35,692	2,376	25	945	1,529	12,955	4,321
Fisher	17,567	.	.	171	720	5,956	6,603
Fox	27,540	3,319	524	550	1,269	12,146	2,233
Lynx	9,228	211	0	2	.	2,643	1,347
Marten	119,724	3,145	.	0	2,022	23,875	22,283
Mink	24,334	3,796	181	1,930	547	6,028	5,036
Muskrat	203,728	1,826	1,718	10,704	18,795	71,965	47,378
Otter	9,636	760	.	428	409	2,623	3,443
Rabbit	0	.	.	0	0	.	.
Raccoon	40,374	.	445	3,625	2,686	10,784	19,097
Fur seal	0	.	.	.	.	.	.
Hair seal	5,928	0	0	0	0	0	.
Skunk	1,004	.	0	43	25	497	344
Squirrel	31,202	1,752	25	1,289	554	4,315	2,844
Wildcat or bobcat	2,192	.	0	1,196	803	0	56
Wolf	2,749	47	0	0	.	617	439
Wolverine	543	.	.	.	.	0	7
Other	199	.	.	.	.	.	199
Total ranch-raised [2]	**1,702,690**	**68,460**	**45,150**	**913,840**	**45,030**	**51,300**	**358,960**
Fox	7,890	1,760	1,150	1,140	1,130	1,800	560
Mink	1,694,800	66,700	44,000	912,700	43,900	49,500	358,400

	Manitoba	Saskatchewan	Alberta	British Columbia	Yukon	Northwest Territories	Nunavut
	number						
Total wild-caught [1]	**75,046**	**64,144**	**70,425**	**25,866**	**4,480**	**31,375**	**7,268**
Badger	155	336	133	0	.	.	.
Bear	552	51	63	23	0	11	68
Beaver	13,444	11,926	12,179	2,037	198	1,783	0
Cougar	.	.	0	0	.	.	.
Coyote or prairie wolf	6,854	17,723	18,965	846	35	8	0
Ermine	4,229	2,155	3,825	2,386	41	905	0
Fisher	1,594	1,110	1,143	226	2	42	0
Fox	1,986	1,777	1,089	195	67	1,207	1,178
Lynx	952	427	1,019	815	542	1,270	0
Marten	20,839	3,934	10,072	15,396	2,466	15,692	0
Mink	3,749	1,508	464	393	20	682	0
Muskrat	13,477	18,956	8,801	611	386	9,111	0
Otter	1,045	450	176	278	9	15	0
Rabbit	0	0	0	.	.	.	.
Raccoon	2,687	900	58	92	.	.	.
Fur seal	.	.	.	.	.	.	.
Hair seal	.	.	.	.	.	169	5,759
Skunk	0	64	27	4	.	.	.
Squirrel	2,974	2,472	12,101	2,225	400	251	0
Wildcat or bobcat	11	17	8	101	.	.	.
Wolf	443	320	276	115	172	96	224
Wolverine	55	18	26	123	142	133	39
Other	.	.	.	.	0	0	0
Total ranch-raised [2]	**75,260**	**x**	**x**	**144,200**	**.**	**.**	**.**
Fox	x	x	x	0	.	.	.
Mink	x	0	x	144,200	.	.	.

1. Data on wild-caught furs are on a "fur year basis" which is from July 1 to June 30.
2. The ranched-raised fur estimates operate on a calendar year basis, with most ranch peltings occurring in the fall.

Source(s): Statistics Canada, CANSIM table 003-0013.

Table 3.28
Value of pelts harvested by province and territory, 2008

	Canada	Newfoundland and Labrador	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario
	dollars						
Total wild-caught [1]	**16,016,473**	**494,010**	**46,707**	**386,805**	**536,015**	**3,527,536**	**2,607,483**
Badger	21,034	.	.	.	.	.	0
Bear	334,510	0	..	8,295	0	104,819	1,250
Beaver	2,489,983	38,188	6,944	93,257	179,727	756,296	730,422
Cougar	0	.	.	.	.	.	.
Coyote or prairie wolf	1,560,535	7,098	7,243	35,737	29,694	97,591	29,222
Ermine	145,084	10,692	88	3,005	6,940	47,286	14,907
Fisher	806,772	.	.	6,589	37,273	279,872	282,410
Fox	591,816	80,253	..	13,448	28,910	272,304	29,144
Lynx	1,134,751	31,967	0	0	.	295,329	116,071
Marten	5,996,793	219,521	..	0	59,712	1,032,116	818,232
Mink	286,980	51,929	2,342	21,674	5,945	64,680	48,245
Muskrat	767,161	6,902	8,742	45,920	87,439	285,701	187,617
Otter	370,929	38,464	.	19,739	17,767	101,746	115,203
Rabbit	0	.	.	0	0	.	.
Raccoon	446,666	..	4,655	42,413	28,447	113,663	205,293
Fur seal	0	.	.	.	.	.	.
Hair seal	321,165	0	0	0	0	0	.
Skunk	3,188	.	0	78	69	1,382	1,355
Squirrel	45,885	2,383	35	1,353	767	4,660	3,100
Wildcat or bobcat	182,484	.	0	95,297	53,325	0	3,863
Wolf	351,482	6,613	0	0	.	70,091	19,290
Wolverine	159,006	.	.	.	.	0	1,610
Other	249	.	.	.	.	.	249
Total ranch-raised [2]	**76,285,173**	**2,767,911**	**1,966,040**	**42,251,378**	**2,101,060**	**2,406,638**	**15,661,451**
Fox	751,444	167,622	109,526	108,575	107,621	171,432	53,334
Mink	75,533,729	2,600,289	1,856,514	42,142,803	1,993,439	2,235,206	15,608,117

	Manitoba	Saskatchewan	Alberta	British Columbia	Yukon	Northwest Territories	Nunavut
	dollars						
Total wild-caught [1]	**2,002,920**	**1,185,446**	**1,970,331**	**1,266,551**	**307,712**	**1,124,121**	**560,836**
Badger	5,214	11,599	4,221	0	.	.	.
Bear	53,544	6,572	5,945	2,116	0	6,275	145,694
Beaver	253,688	183,660	157,109	54,490	5,346	30,856	0
Cougar	.	.	0	0	.	.	.
Coyote or prairie wolf	141,055	445,556	745,135	20,702	1,330	172	0
Ermine	15,182	10,775	19,698	12,670	160	3,681	0
Fisher	66,868	53,025	62,659	15,974	92	2,010	0
Fox	44,735	28,639	19,424	4,939	1,712	26,768	24,882
Lynx	133,642	56,308	166,984	165,673	60,704	108,073	0
Marten	1,042,575	232,303	682,579	891,120	167,688	850,947	0
Mink	52,224	19,106	6,849	5,879	200	7,907	0
Muskrat	33,692	50,991	28,779	1,686	1,583	28,109	0
Otter	42,114	17,014	6,950	11,037	351	544	0
Rabbit	0	0	0	.	.	.	.
Raccoon	37,537	11,943	1,326	1,389	.	.	.
Fur seal	.	.	.	.	.	.	.
Hair seal	.	.	.	.	.	6,374	314,791
Skunk	0	224	80	0	.	.	.
Squirrel	3,628	3,510	22,145	3,248	600	456	0
Wildcat or bobcat	548	3,063	2,251	24,137	.	.	.
Wolf	61,475	45,034	29,722	14,901	28,896	13,247	62,213
Wolverine	15,199	6,124	8,475	36,590	39,050	38,702	13,256
Other	.	.	.	.	0	0	0
Total ranch-raised [2]	**3,296,167**	**x**	**x**	**5,807,476**	**.**	**.**	**.**
Fox	x	x	x	0	.	.	.
Mink	x	0	x	5,807,476	.	.	.

1. Data on wild-caught furs are on a "fur year basis" which is from July 1 to June 30.
2. The ranched-raised fur estimates operate on a calendar year basis, with most ranch peltings occurring in the fall.

Source(s): Statistics Canada, CANSIM table 003-0013.

Section 4

Protected areas

One approach to the loss of natural areas and the potential extinction of species is the creation of a network of protected areas. Protected areas are defined as legally established areas (both land and water) that are regulated and managed for conservation objectives. The data found in Table 4.1 indicate the total protected land area in Canada.

Table 4.1
Terrestrial and marine protected areas by province and territory, 2011

	Protected areas [1]	Area protected		Total area of land and freshwater	Land and freshwater protected
		Marine [2]	Terrestrial		
	number	square kilometres			percent
Canada	**5,384**	**49,265**	**981,511**	**9,976,182**	**9.8**
Newfoundland and Labrador	65	230	18,535	406,135	4.6
Prince Edward Island	119	16	156	5,955	2.6
Nova Scotia	73	22	4,598	55,386	8.3
New Brunswick	74	63	2,233	73,024	3.1
Quebec	2,399	5,039	131,035	1,510,840	8.7
Ontario	666	5	106,456	1,077,368	9.9
Manitoba	305	885	63,951	649,741	9.8
Saskatchewan	323	0	50,399	652,429	7.7
Alberta	263	0	82,130	663,242	12.4
British Columbia	1,011	6,345	135,989	947,009	14.4
Yukon	22	78	57,295	483,779	11.8
Northwest Territories	33	3,002	120,415	1,352,234	8.9
Nunavut	29	24,992	208,588	2,099,041	9.9

1. Includes protected areas administered federally, provincially and territorially, as well as Aboriginal or privately held conservation lands that are recognized by protected area agencies as being part of their network.
2. Some marine protected areas managed by Fisheries and Oceans Canada are not included in this provincial breakdown, but are included in the Canada total.

Source(s): Canadian Council on Ecological Areas, 2011, *CARTS Reports*, *www.ccea.org/en_cartsreports.html* (accessed May 10, 2011). Statistics Canada, Environmental Accounts and Statistics Division, 2011, special tabulation.

Section 5

Natural resources

This section presents a variety of statistics that describe the various resource sectors of the economy: agriculture, fisheries, forestry, minerals and energy resources.

5.1 Agriculture

The agriculture industry is one of the largest land-using economic activities in Canada. Because of agriculture's extent, agricultural practices have considerable influence on the environment. Agriculture is also a significant contributor to the economy. The agriculture and food product industries'[1] gross domestic product (GDP) are illustrated in Table 5.1 and employment in the agriculture industries is indicated in Table 5.2.

The agricultural industry in Canada has undergone significant change since 1871. The number of farms in Canada increased between 1871 and 1941, but since then the number has been declining (Table 5.3). In 1941, 732,832 farms covered 70.2 million hectares (ha) of land, with 25.2 million ha of cropland. Since then, the number of farms has decreased while farm area has remained stable and the total area of cropland has increased (Table 5.4). Production of many crops, including wheat, barley, corn for grain and dry field peas experienced growth (Tables 5.5 and 5.6). As well, new crops, such as soybeans, are now grown extensively in Canada. The number of livestock produced in Canada has also increased (Table 5.7).

5.2 Fisheries

Despite declines in some fish stocks during the last part of the twentieth century, Canadian fisheries continue to play an important role in communities in Atlantic Canada and British Columbia. The contributions of the fishing industries to GDP are outlined in Table 5.8. Employment in the fishing industries is presented in Table 5.9.

Exports and imports of fish and fish products are presented in Table 5.10. Canada continues to be a net exporter of these products.

After a steady decline throughout the early 1990s, the total catch by seafisheries has remained relatively stable (Table 5.11). Aquaculture production and value is presented in Table 5.12.

5.3 Forestry

While the Canadian economy is less dependent on this natural resource today than it once was, the logging industry is still an important and active segment of the national economy. Logs and bolts—the raw material from which lumber, plywood and other wood products are produced—account for the bulk of wood harvested from forests each year, with pulpwood making up most of the remainder (Table 5.13). Table 5.14 demonstrates the volume of roundwood harvested by province and territory.

GDP for the forest products industries is illustrated in Table 5.15. Employment in the forest products industries is shown in Table 5.16. Forest products exports made continuous gains from 1991 to 2000, but have since trended downward (Table 5.17).

5.4 Minerals

The mineral industries include the extraction and production of metallic minerals such as copper, gold, iron, nickel, silver and zinc; mineral fuels including coal, crude petroleum and natural gas; and other materials including potash, sand and gravel. Table 5.18 presents the contributions of the mining and oil and gas extraction industries to GDP, while Table 5.20 presents those of petroleum and coal products manufacturing, and primary metal manufacturing.

Employment in mining and oil and gas extraction industries is indicated in Table 5.19. Production of selected minerals and fuels by province and territory is illustrated in Table 5.21. Tables 5.22 and 5.23 detail reserves and production of selected minerals.

1. Sectoral GDP tables in this compendium represent industries that rely primarily on the environment for raw material inputs.

5.5 Energy

Table 5.24 presents primary energy consumption indicators while Table 5.25 outlines production and consumption of primary energy resources. Primary energy production, exports and imports are presented in Table 5.26. Table 5.27 outlines Canadian energy resource reserves of coal, crude oil, crude bitumen, natural gas and uranium.

The generating capacity and generation of electricity by hydro-electric, thermal-electric, nuclear and wind and tidal generating stations are outlined in Table 5.28.

Hydro-electric power generation, the main source of electric power generation in Canada, is presented in Table 5.29. Tables 5.30 and 5.31 present data on the energy consumed and generated in thermal-electric power stations while the generating efficiency of these stations is presented in Table 5.32.

Table 5.1
Gross domestic product of agriculture and food industries

	Total gross domestic product	Agriculture and food industries				
		Crop and animal production	Food manufacturing [1]	Beverage and tobacco product manufacturing	Total	Share of total gross domestic product
	millions of current dollars					percent
1961	38,301	1,743	1,002	431	3,176	8.29
1971	90,792	2,913	1,901	871	5,685	6.26
1981	338,521	10,668	5,628	2,209	18,505	5.47
1991	636,082	11,981	11,600	4,091	27,672	4.35
2001	1,032,172	15,186	16,434	5,472	37,092	3.59
2002	1,068,765	14,630	16,345	5,878	36,853	3.45
2003	1,128,796	15,349	17,297	6,258	38,904	3.45
2004	1,201,306	17,101	17,718	6,688	41,507	3.46
2005	1,280,550	14,629	18,512	6,773	39,914	3.12
2006	1,354,353	13,904	19,291	7,089	40,284	2.97
2007	1,430,770	15,802	20,014	6,500	42,316	2.96

1. Food manufacturing excludes seafood product preparation and packaging.
Source(s): Statistics Canada, CANSIM tables 379-0023 and 379-0024.

Table 5.2
Employment in the agriculture industries

	Total employment	Agriculture industries								
		Crop production	Animal production	Farming - not elsewhere classified	Support activites for crop production	Support activities for animal production	Food manufacturing	Beverage and tobacco product manufacturing	Total	Share of total employment
	thousands of persons									percent
1987	12,333	182.3	205.5	66.9	3.7	3.7	194.7	48.9	705.7	5.72
1988	12,710	178.0	196.3	66.4	4.7	3.6	193.8	48.0	690.8	5.44
1989	12,996	178.1	186.9	69.2	4.6	2.0	196.2	45.0	682.0	5.25
1990	13,086	173.4	187.2	67.8	3.7	4.4	194.8	40.8	672.1	5.14
1991	12,857	175.2	195.5	68.7	3.6	3.0	190.5	42.8	679.3	5.28
1992	12,731	176.4	182.3	69.6	4.1	3.9	196.0	37.6	669.9	5.26
1993	12,793	182.5	180.9	70.8	4.0	4.3	186.4	40.0	668.9	5.23
1994	13,059	172.6	186.0	65.7	4.9	4.1	193.3	33.1	659.7	5.05
1995	13,295	162.1	185.3	61.3	4.2	4.0	194.3	36.2	647.4	4.87
1996	13,420	160.1	183.3	61.6	5.4	4.1	204.6	35.6	654.7	4.88
1997	13,708	160.2	185.0	54.0	5.0	4.2	203.4	30.3	642.1	4.68
1998	14,047	166.8	187.4	52.0	6.3	5.1	206.0	38.0	661.6	4.71
1999	14,402	170.2	184.6	34.2	6.2	5.6	202.5	37.9	641.2	4.45
2000	14,760	150.4	170.7	30.9	6.0	8.6	203.5	38.5	608.6	4.12
2001	14,941	123.7	159.5	25.7	3.9	5.5	212.1	33.8	564.2	3.78
2002	15,298	129.9	158.0	20.4	7.4	6.6	226.0	37.8	586.1	3.83
2003	15,663	131.6	166.6	18.9	4.2	6.5	236.6	39.6	604.0	3.86
2004	15,922	134.5	160.9	17.3	5.9	6.4	247.5	37.2	609.7	3.83
2005	16,125	144.0	157.5	30.0	4.8	6.3	243.5	34.8	620.9	3.85
2006	16,410	140.2	159.5	30.0	5.7	6.4	233.1	32.0	606.9	3.70
2007	16,806	132.0	164.5	24.7	3.5	5.5	236.4	35.2	601.8	3.58
2008	17,087	126.1	164.0	16.0	6.6	6.3	237.3	38.5	594.8	3.48
2009	16,813	133.1	157.1	12.1	4.3	5.8	238.1	32.4	582.9	3.47
2010	17,041	129.7	143.9	11.7	3.6	7.9	225.6	29.9	552.3	3.24

Source(s): Statistics Canada, CANSIM table 282-0088. Statistics Canada, Labour Force Survey, 2011, special tabulation.

Table 5.3
Number of farms by province

	Canada	Newfoundland and Labrador	Prince Edward Island	Nova Scotia	New Brunswick	Quebec
	number					
1871	367,862	…	…	46,316	31,202	118,086
1881	464,025	…	13,629	55,873	36,837	137,863
1891 [1]	542,181	…	14,549	60,122	38,577	174,996
1901 [1]	511,073	…	13,748	54,478	37,006	140,110
1911 [1]	682,329	…	14,113	52,491	37,755	149,701
1921	711,090	…	13,701	47,432	36,655	137,619
1931	728,623	…	12,865	39,444	34,025	135,957
1941	732,832	…	12,230	32,977	31,889	154,669
1951	623,087	3,626	10,137	23,515	26,431	134,336
1961	480,877	1,752	7,335	12,518	11,786	95,777
1971	366,110	1,042	4,543	6,008	5,485	61,257
1981	318,361	679	3,154	5,045	4,063	48,144
1991	280,043	725	2,361	3,980	3,252	38,076
1996	276,548	742	2,217	4,453	3,405	35,991
2001	246,923	643	1,845	3,923	3,034	32,139
2006	229,373	558	1,700	3,795	2,776	30,675

	Canada	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia
	number					
1871	367,862	172,258	…	…	…	…
1881	464,025	206,989	9,077	1,014 [2]	…	2,743
1891 [1]	542,181	216,195	22,008	9,244 [3]	…	6,490
1901 [1]	511,073	204,054	32,252	13,445	9,479	6,501
1911 [1]	682,329	212,108	43,631 [4]	95,013 [4]	60,559 [4]	16,958
1921	711,090	198,053	53,252 [4]	119,451 [4]	82,954 [4]	21,973
1931	728,623	192,174	54,199	136,472	97,408	26,079
1941	732,832	178,204	58,024	138,713	99,732	26,394
1951	623,087	149,920	52,383	112,018	84,315	26,406
1961	480,877	121,333	43,306	93,924	73,212	19,934
1971	366,110	94,722	34,981	76,970	62,702	18,400
1981	318,361	82,448	29,442	67,318	58,056	20,012
1991	280,043	68,633	25,706	60,840	57,245	19,225
1996	276,548	67,520	24,383	56,995	59,007	21,835
2001	246,923	59,728	21,071	50,598	53,652	20,290
2006	229,373	57,211	19,054	44,329	49,431	19,844

1. Data exclude plots under one acre, to attain comparability with data for later years.
2. Data include the portion of the Northwest Territories located west of Manitoba.
3. Data include the districts of Assiniboia, Saskatchewan and Alberta.
4. Data exclude farms located on Indian reserves.

Source(s): Statistics Canada, 1999, *Historical Statistics of Canada*, Second Edition, F.H. Leacy (ed.), Catalogue no. 11-516-X. Statistics Canada, 2007, *Selected Historical Data from the Census of Agriculture*, Catalogue no. 95-632-X.

Table 5.4
Number of farms, farm area and land in crops

	Farms	Farm area [1]	Land in crops
	number	thousands of hectares	
1901	511,073	25,666	8,192
1911	682,329	44,098	14,528
1921	711,090	57,015	20,248
1931	728,623	66,010	23,609
1941	732,832	70,239	22,776
1951	623,087	70,434	25,176
1956	574,993	70,383	25,473
1961	480,877	69,825	25,267
1966	430,503	70,464	27,945
1971	366,110	68,661	27,828
1976	338,552	68,425	28,343
1981	318,361	65,889	30,966
1986	293,089	67,826	33,181
1991	280,043	67,754	33,508
1996	276,548	68,055	34,919
2001	246,923	67,502	36,395
2006	229,373	67,587	35,912

1. Data for 1901 and 1911 include all improved land.

Note(s): The definition of a census farm changed over the years, affecting the comparability of data among censuses.

Source(s): Statistics Canada, 2007, *Selected Historical Data from the Census of Agriculture*, Catalogue no. 95-632-X. Dominion Bureau of Statistics, 1963, *Census of Canada, Agriculture, Bulletin 5.1-1*, Catalogue no. 96-530 (Vol: V - Part: 1).

Table 5.5
Selected field crop production

	Corn for grain	Total dry beans (white and coloured)	Dry field peas	Soybeans	Sunflower seed	Fodder corn
	thousands of tonnes					
1908	581	34	192	..	..	2,665
1909	490	36	222	..	..	2,521
1910	364	23	130	..	..	2,456
1911	487	28	127	..	..	2,433
1912	430	25	106	..	..	2,756
1913	426	22	108	..	..	2,374
1914	354	22	91	..	..	2,950
1915	365	20	95	..	..	3,069
1916	159	11	60	..	..	1,730
1917	197	35	82	..	..	2,444
1918	361	97	117	..	..	4,344
1919	430	38	93	..	..	4,481
1920	364	34	96	..	..	5,118
1921	379	30	75	..	..	5,774
1922	351	36	93	..	..	5,333
1923	346	28	79	..	..	4,827
1924	305	32	88	..	..	5,207
1925	268	41	93	..	..	4,256
1926	198	32	72	..	..	4,073
1927	108	28	76	..	..	3,219
1928	133	32	70	..	..	3,326
1929	132	41	54	..	..	3,013
1930	148	39	65	..	..	3,152
1931	139	36	37	..	..	2,616
1932	128	31	41	..	..	2,594
1933	128	24	37	..	..	2,834
1934	173	22	43	..	..	3,462
1935	197	32	44	..	..	3,699
1936	155	24	34	..	..	2,837
1937	138	35	33	..	..	3,563
1938	195	42	37	..	..	4,004
1939	206	42	36	..	..	4,095
1940	177	40	37	..	..	3,770
1941	348	45	32	6	..	3,431
1942	373	36	38	24	..	3,566
1943	203	33	36	15	2	3,270
1944	304	33	27	18	4	3,448
1945	270	30	36	23	1	2,781
1946	280	37	56	29	6	3,015
1947	175	35	42	30	7	2,808
1948	322	39	32	50	10	3,569
1949	355	43	21	71	12	3,763
1950	358	32	18	90	4	4,279
1951	404	34	20	105	3	3,321
1952	538	35	26	112	1	3,521
1953	586	32	36	136	3	3,285
1954	632	28	30	130	7	2,763
1955	903	33	28	163	7	3,117
1956	706	31	49	144	8	3,129
1957	750	30	37	177	5	3,271
1958	756	33	30	181	10	3,406
1959	785	31	28	186	15	3,575
1960	662	27	30	136	13	3,015
1961	742	36	28	180	11	3,677
1962	848	39	22	180	8	4,340
1963	920	42	28	136	18	4,521
1964	1,342	56	47	190	14	5,321
1965	1,512	60	36	218	13	5,453
1966	1,686	80	30	245	15	6,026
1967	1,883	39	30	220	16	6,677
1968	2,077	44	28	246	11	7,235
1969	1,883	53	35	209	15	7,780
1970	2,634	51	44	283	25	8,910
1971	2,942	79	52	280	77	9,724
1972	2,567	88	43	375	77	9,789
1973	2,880	79	44	396	41	10,969
1974	2,620	102	46	301	8	11,873

Table 5.5 – continued

Selected field crop production

	Corn for grain	Total dry beans (white and coloured)	Dry field peas	Soybeans	Sunflower seed	Fodder corn
	thousands of tonnes					
1975	3,645	91	49	367	30	14,528
1976	3,759	90	43	250	24	14,423
1977	4,249	50	55	580	81	14,350
1978	4,480	76	80	516	120	13,764
1979	5,276	62	78	657	218	13,650
1980	5,753	70	76	690	166	12,806
1981	6,683	65	110	607	165	12,096
1982	6,522	68	157	848	95	11,234
1983	5,931	39	117	735	46	9,593
1984	6,778	45	131	917	85	10,292
1985	6,970	58	169	1,012	62	9,530
1986	5,912	42	239	960	40	8,294
1987	7,065	110	415	1,270	52	8,571
1988	5,450	59	320	1,153	48	6,574
1989	6,571	71	234	1,219	68	6,700
1990	7,067	100	264	1,262	110	7,019
1991	7,412	0	410	1,460	135	5,537
1992	4,883	73	505	1,453	65	5,274
1993	6,755	131	970	1,945	78	5,249
1994	7,190	171	1,441	2,254	117	4,744
1995	7,281	203	1,455	2,298	66	4,996
1996	7,542	133	1,173	2,170	55	5,375
1997	7,180	168	1,762	2,738	65	5,467
1998	8,952	185	2,337	2,737	112	6,426
1999	9,161	284	2,252	2,781	122	6,612
2000	6,954	261	2,864	2,703	119	5,890
2001	8,389	289	2,045	1,635	104	6,079
2002	8,999	407	1,284	2,336	157	6,356
2003	9,587	344	1,931	2,273	142	7,213
2004	8,837	218	3,097	3,044	52	7,795
2005	9,332	308	2,994	3,156	84	7,653
2006	8,990	372	2,520	3,466	157	9,681
2007	11,649	277	2,935	2,696	125	8,137
2008	10,592	266	3,571	3,336	112	8,841
2009	9,561	224	3,379	3,507	102	10,974
2010	11,714	254	2,862	4,345	68	8,537

Source(s): Statistics Canada, CANSIM table 001-0010.

Table 5.6
Production of major small grains

	All wheat	Oats	Barley	All rye	Mixed grains
	thousands of tonnes				
1908	3,060	3,862	1,017	44	389
1909	4,538	5,451	1,206	44	396
1910	3,595	3,785	629	40	267
1911	6,294	5,640	969	64	321
1912	6,101	6,040	1,076	62	351
1913	6,305	6,240	1,052	59	322
1914	4,389	4,828	789	51	334
1915	10,711	7,171	1,176	63	357
1916	7,151	6,326	932	73	216
1917	6,361	6,216	1,199	97	330
1918	5,146	6,574	1,683	216	728
1919	5,260	6,083	1,227	260	568
1920	7,162	8,184	1,378	287	662
1921	8,189	6,574	1,301	546	454
1922	10,879	7,576	1,564	823	566
1923	12,905	8,697	1,677	590	608
1924	7,132	6,261	1,934	349	653
1925	10,763	6,205	1,896	233	676
1926	11,081	5,912	2,177	309	692
1927	13,055	6,781	2,110	395	768
1928	15,424	6,973	2,970	372	799
1929	8,224	4,362	2,228	334	730
1930	11,449	6,526	2,943	558	904
1931	8,745	5,063	1,467	134	805
1932	12,059	6,038	1,759	215	797
1933	7,672	4,742	1,379	107	674
1934	7,508	4,952	1,388	120	774
1935	7,674	6,082	1,829	244	807
1936	5,967	4,192	1,565	109	687
1937	4,904	4,140	1,810	146	737
1938	9,797	5,728	2,226	279	799
1939	14,169	5,928	2,246	390	900
1940	14,701	5,868	2,271	356	880
1941	8,564	4,719	2,403	283	931
1942	15,135	9,894	5,575	614	1,257
1943	7,711	7,119	4,536	162	614
1944	11,291	7,310	4,079	216	999
1945	8,610	5,417	3,239	149	824
1946	11,201	5,565	3,197	220	972
1947	9,212	4,167	3,046	346	617
1948	10,381	5,326	3,315	699	1,096
1949	9,962	4,698	2,570	259	986
1950	12,697	6,196	3,647	331	1,283
1951	15,069	7,616	5,343	447	1,417
1952	19,105	7,264	6,348	610	1,307
1953	17,256	6,384	5,706	733	1,383
1954	9,035	4,725	3,815	326	1,299
1955	14,129	6,160	5,467	351	1,353
1956	15,596	7,210	5,857	214	1,360
1957	10,687	4,887	4,703	212	1,282
1958	10,834	5,331	5,178	195	1,303
1959	12,112	5,308	4,695	214	1,278
1960	14,107	6,146	4,213	260	1,203
1961	7,714	4,379	2,452	165	1,251
1962	15,393	7,597	3,611	312	1,475
1963	19,690	6,876	4,816	350	1,444
1964	16,349	5,352	3,668	314	1,452
1965	17,674	6,169	4,753	453	1,649
1966	22,517	5,717	6,450	438	1,662
1967	16,136	4,655	5,506	304	1,569
1968	17,690	5,501	7,098	330	1,772
1969	18,268	5,473	8,083	386	1,793
1970	9,023	5,444	8,889	480	2,026
1971	14,412	5,641	13,099	557	2,184
1972	14,514	4,664	11,285	348	2,127
1973	16,160	5,071	10,218	369	1,981
1974	13,302	3,978	8,791	498	1,636
1975	17,082	4,480	9,509	550	1,820

Table 5.6 – continued

Production of major small grains

	All wheat	Oats	Barley	All rye	Mixed grains
	thousands of tonnes				
1976	23,587	4,832	10,514	440	1,559
1977	19,859	4,283	11,802	406	1,597
1978	21,136	3,568	10,398	605	1,635
1979	17,196	2,878	8,478	530	1,560
1980	19,291	2,912	11,395	456	1,509
1981	24,802	3,188	13,724	923	1,459
1982	26,715	3,637	13,965	928	1,484
1983	26,464	2,773	10,209	823	1,146
1984	21,188	2,576	10,279	652	1,238
1985	24,252	2,736	12,387	569	1,265
1986	31,359	3,218	14,568	515	884
1987	25,945	2,957	13,916	409	884
1988	15,913	2,942	10,326	277	652
1989	24,796	3,265	11,784	806	720
1990	32,098	2,692	13,441	599	698
1991	31,946	1,794	11,617	339	618
1992	29,877	2,828	11,032	281	604
1993	27,226	3,557	12,972	319	712
1994	22,920	3,640	11,692	400	631
1995	24,989	2,873	13,032	310	653
1996	29,801	4,361	15,562	309	582
1997	24,299	3,489	13,534	320	626
1998	24,082	3,958	12,709	408	540
1999	26,960	3,641	13,196	387	463
2000	26,536	3,403	13,229	260	435
2001	20,630	2,691	10,846	228	446
2002	15,961	2,911	7,468	134	359
2003	23,049	3,377	12,164	327	384
2004	24,796	3,467	12,557	398	342
2005	25,748	3,283	11,678	330	316
2006	25,265	3,852	9,573	383	346
2007	20,054	4,696	10,984	252	263
2008	28,611	4,273	11,781	316	222
2009	26,848	2,906	9,517	280	213
2010	23,167	2,298	7,605	216	232

Source(s): Statistics Canada, CANSIM table 001-0010.

Table 5.7
Selected livestock populations

	Total cattle	Sheep and lambs, total	Total pigs
	thousands		
1931	7,973	3,627	4,700
1932	8,548	3,604	4,670
1933	8,954	3,307	3,854
1934	9,070	3,291	3,736
1935	8,973	3,224	3,651
1936	8,829	3,159	4,136
1937	8,915	3,071	4,016
1938	8,492	3,047	3,527
1939	8,374	2,911	4,364
1940	8,380	2,887	6,002
1941	8,517	2,840	6,081
1942	8,712	2,972	6,808
1943	9,122	3,107	7,413
1944	9,544	3,213	6,790
1945	9,632	3,032	4,964
1946	9,174	2,792	4,277
1947	9,085	2,465	4,957
1948	8,984	2,050	3,946
1949	8,641	1,773	4,452
1950	8,343	1,579	4,372
1951	8,363	1,461	4,914
1952	9,153	1,534	5,428
1953	9,806	1,592	3,970
1954	10,170	1,636	4,440
1955	10,603	1,634	4,800
1956	11,011	1,620	4,731
1957	11,265	1,628	4,758
1958	10,990	1,630	5,931
1959	11,058	1,608	6,519
1960	11,337	1,607	5,070
1961	11,934	1,548	5,331
1962	12,067	1,449	4,981
1963	12,365	1,346	5,211
1964	12,994	1,272	5,667
1965	13,260	1,132	5,147
1966	12,879	1,006	5,401
1967	12,697	922	6,070
1968	12,487	829	5,771
1969	12,366	796	5,809
1970	12,826	796	7,114
1971	13,271	851	7,413
1972	13,736	827	7,207
1973	14,249	779	6,972
1974	15,318	730	6,030
1975	15,622	650	5,692
1976	15,063	577	6,197
1977	14,293	559	6,799
1978	13,353	587	8,363
1979	13,239	649	10,091
1980	13,382	734	10,190
1981	13,364	803	9,970
1982	13,170	812	9,890
1983	12,836	803	10,346
1984	12,582	769	10,573
1985	12,160	720	9,967
1986	11,788	695	9,998
1987	11,816	731	10,801
1988	12,153	789	10,951
1989	12,457	828	10,392
1990	12,560	874	10,172
1991	12,843	918	10,596
1992	13,025	897	10,743
1993	13,252	883	10,534
1994	13,924	826	11,290
1995	14,730	858	11,588
1996	15,051	847	11,480
1997	15,058	822	11,985

Table 5.7 – continued

Selected livestock populations

	Total cattle	Sheep and lambs, total	Total pigs
	thousands		
1998	14,944	892	12,429
1999	14,753	979	12,904
2000	14,968	1,105	13,576
2001	15,424	1,248	14,375
2002	15,421	1,252	14,745
2003	15,670	1,247	14,725
2004	16,610	1,240	14,810
2005	16,880	1,190	15,110
2006	16,000	1,151	14,907
2007	15,800	1,096	13,810
2008	15,090	1,062	12,180
2009	14,535	1,063	11,835
2010	13,975	1,047	11,895

Source(s): Statistics Canada, CANSIM tables 003-0004, 003-0031, 003-0032 and 003-0072.

Table 5.8

Gross domestic product of fishing industries

	Total gross domestic product	Fishing industries			
		Fishing, hunting and trapping	Seafood product preparation and packaging	Total	Share of total gross domestic product
	millions of current dollars				percent
1961	38,301	86	53	139	0.36
1971	90,792	150	135	285	0.31
1981	338,521	579	580	1,159	0.34
1991	636,082	1,020	917	1,937	0.30
2001	1,032,172	1,066	941	2,007	0.19
2002	1,068,765	1,118	951	2,069	0.19
2003	1,128,796	1,170	985	2,155	0.19
2004	1,201,306	1,131	991	2,122	0.18
2005	1,280,550	1,085	999	2,084	0.16
2006	1,354,353	939	976	1,915	0.14
2007	1,430,770	978	901	1,879	0.13

Source(s): Statistics Canada, CANSIM tables 379-0023 and 379-0024.

Table 5.9
Employment in the fishing industries

	Total employment	Fishing industries				
		Fishing, hunting and trapping	Aquaculture	Seafood product preparation and packaging	Total	Share of total employment
	thousands of persons					percent
1987	12,333	33.4	2.3	31.6	67.3	0.55
1988	12,710	37.5	1.6	35.3	74.4	0.59
1989	12,996	36.9	2.0	33.8	72.7	0.56
1990	13,086	37.1	2.5	30.7	70.3	0.54
1991	12,857	40.9	3.0	29.5	73.4	0.57
1992	12,731	35.1	3.1	29.4	67.6	0.53
1993	12,793	36.2	2.9	25.5	64.6	0.50
1994	13,059	35.2	2.5	25.2	62.9	0.48
1995	13,295	28.5	2.2	22.6	53.3	0.40
1996	13,420	29.7	3.1	19.9	52.7	0.39
1997	13,708	29.2	3.8	22.3	55.3	0.40
1998	14,047	29.2	2.4	22.2	53.8	0.38
1999	14,402	28.8	3.4	24.5	56.7	0.39
2000	14,760	28.1	4.6	22.7	55.4	0.38
2001	14,941	25.5	4.0	23.4	52.9	0.35
2002	15,298	25.4	3.3	27.5	56.2	0.37
2003	15,663	26.1	3.1	23.9	53.1	0.34
2004	15,922	26.5	3.6	25.6	55.7	0.35
2005	16,125	25.9	5.0	24.0	54.9	0.34
2006	16,410	25.9	4.4	21.4	51.7	0.32
2007	16,806	23.1	5.0	19.8	47.9	0.29
2008	17,087	21.2	4.7	19.8	45.7	0.27
2009	16,813	20.1	3.7	20.2	44.0	0.26
2010	17,041	20.0	4.1	17.7	41.8	0.25

Source(s): Statistics Canada, CANSIM table 282-0088. Statistics Canada, Labour Force Survey, 2011, special tabulation.

Table 5.10
Exports and imports of fish and fish products

	Exports			Imports		
	Total exports	Fish fresh, frozen, preserved and canned	Share of total exports	Total imports	Fish and marine animals	Share of total imports
	millions of current dollars		percent	millions of current dollars		percent
1976	38,166	590	1.54	36,608	182	0.50
1977	44,495	795	1.79	41,523	219	0.53
1978	53,361	1,111	2.08	49,048	248	0.51
1979	65,582	1,271	1.94	61,157	310	0.51
1980	76,680	1,265	1.65	67,903	354	0.52
1981	84,432	1,494	1.77	77,140	360	0.47
1982	84,393	1,591	1.89	66,738	352	0.53
1983	90,556	1,563	1.73	73,098	418	0.57
1984	111,330	1,595	1.43	91,493	488	0.53
1985	119,061	1,849	1.55	102,669	494	0.48
1986	125,172	2,580	2.06	115,195	613	0.53
1987	131,484	2,957	2.25	119,324	691	0.58
1988	143,534	2,818	1.96	132,715	679	0.51
1989	146,963	2,530	1.72	139,216	738	0.53
1990	152,056	2,817	1.85	141,000	679	0.48
1991	147,669	2,636	1.79	140,658	736	0.52
1992	163,464	2,736	1.67	154,430	777	0.50
1993	190,213	2,868	1.51	177,123	996	0.56
1994	228,167	3,258	1.43	207,872	1,126	0.54
1995	265,334	3,496	1.32	229,936	1,286	0.56
1996	280,079	3,444	1.23	237,689	1,470	0.62
1997	303,378	3,498	1.15	277,726	1,434	0.52
1998	327,162	3,664	1.12	303,399	1,636	0.54
1999	369,035	4,261	1.15	327,026	1,870	0.57
2000	429,372	4,561	1.06	362,337	1,929	0.53
2001	420,730	4,722	1.12	350,071	1,945	0.56
2002	414,038	5,240	1.27	356,727	1,935	0.54
2003	399,122	4,987	1.25	342,710	1,812	0.53
2004	429,006	4,858	1.13	363,158	1,804	0.50
2005	450,210	4,673	1.04	387,838	1,823	0.47
2006	453,952	4,434	0.98	404,345	1,822	0.45
2007	463,120	4,292	0.93	415,683	1,896	0.46
2008	488,754	4,249	0.87	443,777	1,909	0.43
2009	369,343	3,932	1.06	374,081	2,012	0.54
2010	404,834	4,191	1.04	413,833	2,027	0.49

Source(s): Statistics Canada, CANSIM table 228-0003.

Table 5.11
Landed catch and value

	Sea fisheries								Freshwater fisheries	
	Groundfish [1]		Pelagic fish [2]		Shellfish [3]		Total [4]		Total	
	Catch	Value	Catch	Value	Catch	Value	Catch	Value	Catch	Value
	tonnes (live weight)	thousands of current dollars	tonnes (live weight)	thousands of current dollars	tonnes (live weight)	thousands of current dollars	tonnes (live weight)	thousands of current dollars	tonnes (live weight)	thousands of current dollars
1990	791,246	475,491	560,238	425,690	246,796	518,244	1,624,792	1,432,044	44,718	66,413
1991	792,383	500,184	431,514	293,514	247,199	580,985	1,506,966	1,392,490	49,179	73,403
1992	630,574	415,422	389,644	315,887	265,243	647,967	1,317,602	1,397,032	38,009	71,794
1993	431,407	297,814	418,817	364,067	284,396	730,487	1,154,408	1,419,576	37,855	59,529
1994	332,896	252,858	351,139	402,321	313,434	1,013,681	1,031,024	1,699,994	36,077	72,337
1995	220,710	232,210	302,013	242,458	305,165	1,270,278	858,039	1,781,263	38,756	77,737
1996	274,086	231,609	310,941	269,575	299,562	1,037,063	918,663	1,579,576	38,295	69,249
1997	276,317	255,308	323,497	222,455	337,297	1,081,094	977,940	1,599,953	38,798	70,505
1998	287,498	288,029	319,085	166,369	355,523	1,134,154	994,575	1,611,592	40,744	83,092
1999	298,264	324,995	286,236	124,061	382,486	1,435,695	1,003,063	1,910,165	40,566	82,505
2000	229,637	309,511	305,813	186,734	429,937	1,617,924	1,003,500	2,137,792	40,573	86,820
2001	274,925	302,344	307,672	171,916	433,100	1,618,301	1,053,338	2,118,552	38,025	79,618
2002	255,994	284,244	315,275	186,949	458,996	1,688,199	1,073,988	2,198,050	40,531	85,418
2003	255,614	302,496	348,728	185,743	466,742	1,753,631	1,120,060	2,278,953	36,969	71,504
2004	306,693	290,826	331,687	173,995	491,880	1,769,258	1,176,229	2,275,860	36,207	63,793
2005 [5]	304,286	313,854	324,465	184,387	443,537	1,550,581	1,096,645	2,076,771	32,286	66,117
2006 [5]	258,389	295,087	315,945	184,809	460,871	1,329,919	1,077,393	1,856,171	32,234	67,885
2007 [5]	229,888	304,741	300,114	146,716	442,627	1,417,579	986,921	1,887,559	32,303	63,570
2008 [5]	221,729	253,643	243,198	134,462	450,327	1,484,144	935,567	1,893,298	..	..
2009 [5]	203,648	236,643	284,120	126,665	420,214	1,264,141	924,756	1,641,469	..	..

1. Species that are usually caught near the ocean bottom, including cod, haddock, pollock, redfish, halibut, flounder, and many others.
2. The pelagic species live in midwater or close to the surface. They include herring, capelin, swordfish, tuna, and many others.
3. Aquatic shelled molluscs (oysters, etc.) and crustaceans (crabs, shrimp, etc.).
4. Data do not add up because total also includes marine plants, lumpfish roe and miscellaneous other marine products.
5. Sea fisheries data are preliminary.

Source(s): Fisheries and Oceans Canada, 2010, *Commercial Fisheries, Landings, Seafisheries*, *www.dfo-mpo.gc.ca/stats/commercial/sea-maritimes-eng.htm* (accessed January 12, 2011). Fisheries and Oceans Canada, 2010, *Commercial Fisheries, Landings, Summary Tables*, *www.dfo-mpo.gc.ca/stats/commercial/land-debarq/sum/sum-tab-eng.htm* (accessed January 12, 2011).

Table 5.12
Aquaculture, production and value

	Total aquaculture		Salmon		Trout [1]		Oysters		Mussels	
	tonnes	thousands of current dollars	tonnes	thousands of current dollars	tonnes	thousands of current dollars	tonnes	thousands of current dollars	tonnes	thousands of current dollars
1991	49,594	233,559	34,109	195,538	3,324	15,575	5,900	5,952	3,956	4,875
1992	46,931	244,014	30,325	202,735	3,927	20,234	5,843	6,049	4,877	5,696
1993	53,927	277,604	36,670	234,036	4,121	21,737	6,036	6,573	5,141	5,727
1994	57,147	301,992	36,083	249,152	4,434	24,169	7,534	9,081	6,867	7,575
1995	66,269	341,957	42,515	286,852	5,316	26,216	7,719	9,702	8,626	9,891
1996	72,572	356,241	45,624	287,154	7,712	38,993	7,989	10,710	9,898	12,022
1997	81,843	385,447	56,775	324,030	6,876	33,629	5,631	8,695	11,570	13,834
1998	91,499	430,414	58,618	349,043	8,376	42,123	8,137	11,321	15,018	18,965
1999	113,253	558,365	72,890	450,084	12,576	60,830	8,785	13,278	17,397	23,185
2000	127,336	601,326	82,195	483,755	12,037	57,289	9,624	16,515	21,290	27,189
2001	153,326	597,676	105,606	470,471	11,218	51,193	11,319	16,772	21,566	30,404
2002	171,035	620,288	126,321	502,036	8,867	42,811	11,520	15,176	20,615	31,449
2003	150,205	583,285	99,961	441,471	6,403	32,038	13,621	19,208	20,590	30,929
2004	141,580	532,924	90,646	400,180	4,858	22,086	13,228	16,740	22,863	32,807
2005	154,484	706,794	98,370	543,343	4,857	21,363	12,957	16,521	22,930	33,582
2006	171,629	904,595	118,061	748,246	4,374	19,743	13,200	19,063	23,876	35,817
2007	152,475	752,690	102,509	604,917	5,044	23,570	11,065	16,726	23,835	33,940
2008	155,546	794,000	104,075	624,582	7,785	40,330	8,989	13,502	19,927	27,322
2009	154,169	793,926	100,220	598,974	7,000	31,416	8,477	16,251	20,912	28,859

1. Includes steelhead.

Note(s): The production and value of aquaculture includes the amount and value produced on sites and excludes hatcheries or processing. Shellfish also includes some wild production. The data are collected from each of the provincial departments responsible for aquaculture.

Source(s): Statistics Canada, CANSIM table 003-0001.

Table 5.13
Volume of roundwood harvested by forest product category, selected years

	Industrial roundwood				Fuelwood and firewood	Total roundwood harvested
	Logs and bolts [1]	Pulpwood	Other	Total		
	thousands of cubic metres					
1940	32,625	20,981	2,109	55,715	19,732	75,447
1945	30,596	26,412	2,039	59,047	17,188	76,235
1950	40,095	32,311	1,701	74,107	11,508	85,615
1955	44,262	38,721	1,691	84,674	8,208	92,882
1960	51,118	33,924	1,524	86,566	6,750	93,316
1965	62,618	34,164	1,838	98,620	5,125	103,745
1970	75,645	40,553	1,294	117,492	4,133	121,625
1975	73,542 r	37,270 r	915	111,727 r	3,783	115,510 r
1980	109,952	38,909	1,923	150,784	4,840 r	155,624 r
1985	119,317 r	40,620 r	2,077 r	162,014 r	6,708	168,722 r
1990	118,941 r	35,876 2	1,581 r	156,398 r	6,169 2	162,567 r
1995	150,150 r	30,926 3	2,081 r	183,156 r	5,340 r	188,497 r
2000	166,652 r	28,699 r	3,566 r	198,917 r	2,927 r	201,843 r
2001	154,417 r	23,079 r	5,449 r	182,945 r	2,908 r	185,854 r
2002	164,388 2	25,557 2	3,298 2	193,243 2	2,885 2	196,128 2
2003	147,053 r	27,841 r	3,318 r	178,211 r	2,843 2	181,054 r
2004	173,233 r	28,313 r	3,583 r	205,129 r	2,789 2	207,919 r
2005	172,478 r	23,442 r	4,330 r	200,250 r	3,045 2	203,325 r
2006	153,812 2	23,423 2	3,820 2	181,054 2	2,921 2	184,008 2
2007	132,872 2	22,843 2	1,895 2	157,609 2	3,183 2	162,792 2
2008	109,333 2	21,237 2	1,665 2	132,235 2	2,715 2	136,967 2

1. Logs are defined as the stem of a tree after it has been felled; the raw material from which lumber, plywood, and other wood products are processed. Bolts are defined as raw material used in the manufacture of shingles and shakes; short logs to be sawn for lumber or peeled for veneer.
2. Estimated by provincial or territorial forestry agency.
3. Estimated by the Canadian Forest Service or by Statistics Canada.

Source(s): Canadian Council of Forest Ministers, 2010, *Forest Products - National Tables*, *http://nfdp.ccfm.org/products/national_e.php* (accessed November 18, 2010). Natural Resources Canada, 2009, special tabulation.

Table 5.14
Volume of roundwood harvested by province and territory

	Canada	Newfoundland and Labrador	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario
	thousands of cubic metres						
1980	155,624 r	2,795 r	381	4,686	8,387	31,686	21,322
1981	144,736 r	2,568	371 r	4,112	7,795	34,234	22,808
1982	127,202 r	2,379	357 r	3,105	6,320	29,133	19,778
1983	155,983 r	2,429	381 r	2,596	7,442	36,288	23,736
1984	167,824 r	2,889	400 r	3,894	8,378	36,519	28,130
1985	168,722 r	2,509	411 r	3,515	7,896	35,400	28,225
1986	177,190 r	2,408	424 r	4,004	8,720	38,127	30,186
1987	191,685	2,524	480	4,789	7,869	39,503	29,692
1988	190,616 r	2,513	476 r	5,039	9,199	39,381	29,338
1989	188,254 r	2,535	416 r	4,772	9,281	36,192	29,642
1990	162,567 r	2,876 2	448 r	4,639 2	8,824 2	30,148 2	25,420 2
1991	160,880 r	2,680	452 r	4,348	8,643	28,943 2	23,829 3
1992	170,131 r	2,821 2	510 2	4,248 2	9,205	31,001 r	24,286 3
1993	175,999 r	3,131 2	534 2	4,585 2	8,959	34,091 2	25,432 3
1994	183,261 2	2,445	519 2	5,106 2	9,269	38,231 2	25,952 3
1995	188,497 r	2,983	638	5,483 2	10,055	41,438 2	26,260 3
1996	183,375 r	2,742 2	557 3	6,012 2	10,902 3	38,267 2	25,871 3
1997	188,750 r	2,558 2	514 r	6,989 2	11,253 3	42,543 2	26,595 3
1998	176,957 r	2,398 2	520	5,903 r	11,534 2	43,427 2	24,126 2
1999	198,258 r	2,720 2	693	6,164	11,294	45,646 2	24,814 2
2000	201,843 r	2,868 2	716 2	6,470 r	11,872	43,485 2	28,118 2
2001	185,854 r	2,556 2	626 2	6,182 r	10,186	40,579 2	24,099 2
2002	196,128 2	2,561 2	635 2	6,066	9,989	41,525 2	26,327 2
2003	181,054 r	2,289 2	650 2	6,085	10,788	40,247 r	24,347 2
2004	207,919 r	2,327 2	657 2	6,889	11,004	43,126 r	25,147 2
2005	203,325 r	2,400 2	569 2	6,249	9,968	38,464 r	23,371 2
2006	184,008 2	2,050 2	602 2	5,209	10,451	33,575 2	20,739 2
2007	162,792 2	2,050 2	570 2	5,249	8,944	29,365 2	16,197 2
2008	136,967 2	2,048 2	404 2	4,883	8,931 2	23,718 2	12,039
2009	..	..	..	..	..	..	..

	Canada	Manitoba	Saskatchewan	Alberta	British Columbia	Yukon	Northwest Territories 1
	thousands of cubic metres						
1980	155,624 r	2,335	3,330	5,933	74,654	115	..
1981	144,736 r	1,803	3,555	6,586	60,780	124	..
1982	127,202 r	1,498	2,526	5,714	56,231	161	..
1983	155,983 r	1,520	2,612	7,344	71,443	192	..
1984	167,824 r	1,698	2,726	8,457	74,556	177	..
1985	168,722 r	1,717	3,016	8,979	76,868	186	..
1986	177,190 r	1,703	3,529	10,387	77,503	199	..
1987	191,685	1,887	3,666	10,496	90,591	188	..
1988	190,616 r	1,883	3,818	11,990	86,807	172	..
1989	188,254 r	1,848	3,685	12,293	87,414	176	..
1990	162,567 r	1,563 2	2,758 2	11,911	73,861	82	38
1991	160,880 r	1,278	2,957 2	12,926 2	74,706	79	40
1992	170,131 r	1,598	3,081 2	14,594 2	78,579	162	46
1993	175,999 r	1,539	4,433 r	14,897	78,004	193	203
1994	183,261 2	1,786	4,468	19,790	75,093	421	181
1995	188,497 r	1,987	4,258	20,287	74,622 3	357 r	127 2
1996	183,375 r	2,148	4,126	20,037	72,252 3	254 r	207 2
1997	188,750 r	2,183	4,205	22,217	69,298 3	253 r	143
1998	176,957 r	2,328	3,348	17,172	65,938 2	110 r	154
1999	198,258 r	2,171	3,882	23,729	76,930	145 r	71
2000	201,843 r	2,188	4,197	23,418	78,457 r	33	20 2
2001	185,854 r	2,079	4,119	23,474	71,896	39	19 2
2002	196,128 2	2,106	4,309	24,673	77,864	42	30
2003	181,054 r	2,106 2	4,898	24,228	65,358	32	26
2004	207,919 r	2,106 2	6,103	23,510 2	86,998	26	26
2005	203,325 r	2,498	5,330	27,546	86,880	24	24 2
2006	184,008 2	2,511 2	3,502	25,269	80,059	19	24 2
2007	162,792 2	2,000 2	2,412	20,513	75,448	22	24 2
2008	136,967 2	2,009 2	1,353	19,736 p	61,805	19	24 2
2009	..	..	..	..	48,030	..	..

1. Includes Nunavut up to 1998. Figures not available for Nunavut from 1999 to 2009.
2. Estimated by provincial or territorial forestry agency.
3. Estimated by the Canadian Forest Service or by Statistics Canada.

Source(s): Canadian Council of Forest Ministers, 2010, *Forest Products - National Tables*, *http://nfdp.ccfm.org/products/national_e.php* (accessed October 19, 2010).

Table 5.15
Gross domestic product of forestry and forest products industries

	Total gross domestic product	Forest products industries				
		Forestry and logging	Wood product manufacturing	Paper manufacturing	Total	Share of total gross domestic product
	millions of current dollars					percent
1961	38,301	500	390	939	1,829	4.78
1971	90,792	841	854	1,527	3,222	3.55
1981	338,521	2,366	2,642	5,716	10,724	3.17
1991	636,082	3,017	3,674	6,551	13,242	2.08
2001	1,032,172	5,226	11,300	13,554	30,080	2.91
2002	1,068,765	5,893	12,079	11,865	29,837	2.79
2003	1,128,796	5,429	11,599	10,706	27,734	2.46
2004	1,201,306	6,047	14,140	11,034	31,221	2.60
2005	1,280,550	6,055	12,774	11,110	29,939	2.34
2006	1,354,353	5,780	11,104	10,632	27,516	2.03
2007	1,430,770	5,387	9,457	9,850	24,694	1.73

Source(s): Statistics Canada, CANSIM tables 379-0023 and 379-0024.

Table 5.16
Employment in forest products industries by province and territory

	Canada	Newfoundland and Labrador	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario
	persons						
1996	218,358	2,004	.	x	13,691	63,044	39,608
1997	225,356	2,305	.	x	14,237	66,734	43,000
1998	221,511	1,863	.	x	14,725	66,508	43,348
1999	228,248	1,639	.	x	14,636	67,666	44,379
2000	238,707	1,730	.	x	16,553	72,222	45,495
2001	222,917	1,715	.	x	15,671	68,070	45,521
2002	211,639	1,781	.	4,176	15,093	64,447	44,394
2003	211,817	x	.	4,015	x	67,261	42,555
2004	212,138	x	.	3,886	x	68,163	40,995
2005	203,348	x	.	3,495	x	65,933	38,725
2006	193,494	x	.	3,228	10,591	62,852	37,077
2007	182,242	x	.	x	x	57,712	33,190
2008	162,376	x	.	x	x	52,553	28,159
2009	134,438	x	.	3,193	x	46,251	21,736
2010	131,372	x	.	x	9,139	42,643	21,597

	Manitoba	Saskatchewan	Alberta	British Columbia	Yukon	Northwest Territories (including Nunavut)
	persons					
1996	2,247	x	12,391	73,087	.	.
1997	2,409	x	12,759	70,836	.	.
1998	2,744	x	13,518	65,662	.	.
1999	2,958	x	14,395	69,431	.	.
2000	3,385	x	13,452	72,531	.	.
2001	4,451	x	13,469	61,843	.	.
2002	x	1,890	13,005	57,267	.	.
2003	x	1,725	12,502	58,421	.	.
2004	x	1,811	13,652	59,305	.	.
2005	x	1,825	14,293	56,663	.	.
2006	x	1,652	15,139	53,636	.	.
2007	x	x	15,075	53,025	.	.
2008	x	1,339	13,705	46,707	.	.
2009	x	x	11,487	36,875	.	.
2010	x	x	11,675	36,431	.	.

Note(s): Includes the following industries: forestry and logging; pulp, paper and paperboard mills; sawmills and wood preservation; and other wood product manufacturing. Data do not add up to Canada total because of unavailable data for some provinces or territories.
Source(s): Statistics Canada, CANSIM table 281-0024.

Table 5.17
Export of forest products

	Other crude wood products	Lumber	Other wood fabricated materials	Wood pulp and similar pulp	Newsprint paper	Other paper and paperboard	Total	Total as a share of Canadian exports
	millions of current dollars							percent
1991	275.1	5,225.5	965.8	4,937.5	6,499.1	2,215.0	20,118.0	13.8
1992	360.8	6,606.9	1,367.8	5,068.7	6,317.3	2,525.8	22,247.3	13.7
1993	369.3	9,514.8	1,787.3	4,641.0	6,656.8	2,812.5	25,781.7	13.7
1994	317.3	11,460.3	2,324.4	6,755.4	6,968.5	3,443.5	31,269.4	13.9
1995	339.2	10,966.3	2,735.0	10,938.3	9,480.0	4,785.1	39,243.9	15.0
1996	339.0	12,591.3	2,973.0	6,922.5	8,849.6	4,441.1	36,116.5	13.1
1997	324.6	13,080.7	3,486.9	6,917.4	7,958.3	4,711.1	36,479.0	12.2
1998	417.2	11,755.4	4,548.2	6,722.3	8,094.0	5,432.4	36,969.5	11.6
1999	528.9	13,413.9	5,965.1	7,474.9	8,254.7	5,780.9	41,418.4	11.7
2000	668.3	12,285.6	5,603.4	9,906.2	8,984.2	6,387.6	43,835.3	10.6
2001	667.8	11,703.3	5,384.5	7,356.0	9,294.5	6,356.1	40,762.2	10.1
2002	812.6	11,006.2	5,657.4	7,003.3	8,318.9	5,705.4	38,503.8	9.7
2003	701.9	9,070.5	6,363.4	6,878.2	7,360.6	4,961.6	35,336.2	9.3
2004	648.8	11,673.2	7,942.6	7,210.3	7,364.7	5,296.3	40,135.9	9.7
2005	759.5	10,567.5	7,261.9	6,328.3	7,471.9	5,099.0	37,488.1	8.6
2006	714.5	9,323.6	5,885.3	6,504.9	6,846.3	4,718.7	33,993.3	7.7
2007	578.7	7,479.3	4,160.8	7,116.7	5,975.0	4,345.2	29,655.7	6.6
2008	471.2	5,370.3	2,849.9	6,989.2	6,399.9	4,256.1	26,336.6	5.4
2009	400.2	3,944.5	2,095.7	5,077.6	4,696.3	3,688.9	19,903.2	5.5
2010	540.6	5,050.3	2,168.9	7,016.8	4,197.9	3,378.4	22,352.9	5.6

Note(s): Figures may not add up to totals due to rounding.
Source(s): Statistics Canada, CANSIM table 228-0003.

Table 5.18
Gross domestic product of mining and oil and gas extraction industries

	Total gross domestic product	Mining and oil and gas extraction industries						
		Oil and gas extraction	Coal mining	Metal ore mining	Non-metallic mineral mining and quarrying	Support activities for mining and oil and gas extraction	Total	Share of total gross domestic product
	millions of current dollars							percent
1961	38,301	515	53	852	201	92	1,713	4.47
1971	90,792	1,573	95	1,337	452	195	3,652	4.02
1981	338,521	15,480	624	4,241	1,806	2,051	24,202	7.15
1991	636,082	12,892	1,024	5,375	1,763	2,032	23,086	3.63
2001	1,032,172	45,586	1,151	4,205	3,376	5,125	59,443	5.76
2002	1,068,765	39,943	1,057	4,113	3,388	4,987	53,488	5.00
2003	1,128,796	56,664	795	4,525	3,953	5,607	71,544	6.34
2004	1,201,306	66,119	1,076	6,630	4,933	6,629	85,387	7.11
2005	1,280,550	86,907	2,292	8,360	5,343	7,793	110,695	8.64
2006	1,354,353	86,438	2,094	13,385	4,696	9,985	116,598	8.61
2007	1,430,770	88,674	1,658	16,325	5,302	10,038	121,997	8.53

Source(s): Statistics Canada, CANSIM tables 379-0023 and 379-0024.

Table 5.19
Employment in mining and oil and gas extraction industries by province and territory

	Canada	Newfoundland and Labrador	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario
	persons						
1996	128,240	.	.	.	3,606	11,872	22,723
1997	138,972	.	.	.	3,520	14,090	22,690
1998	138,040	.	.	.	3,373	14,066	20,066
1999	132,392	.	.	.	3,637	13,908	19,618
2000	136,269	.	.	.	3,840	14,064	18,872
2001	138,947	.	.	.	3,457	11,143	18,428
2002	141,225	.	.	.	2,890	11,839	17,184
2003	149,038	.	.	.	x	12,257	17,256
2004	153,776	.	.	.	x	11,720	18,975
2005	162,488	.	.	.	x	11,635	19,338
2006	180,993	.	.	.	x	12,097	20,416
2007	192,237	.	.	.	x	13,206	23,222
2008	202,436	.	.	.	x	13,937	28,606
2009	181,501	.	.	.	x	11,800	23,235
2010	186,460	.	.	.	x	12,907	22,034

	Manitoba	Saskatchewan	Alberta	British Columbia	Yukon	Northwest Territories (including Nunavut)
	persons					
1996	2,927	10,124	57,110	11,862	.	.
1997	3,762	10,910	63,173	12,781	.	.
1998	3,657	10,539	65,936	13,010	.	.
1999	2,854	10,254	63,813	10,665	.	.
2000	3,190	11,153	66,960	10,618	.	.
2001	2,719	10,637	74,503	10,649	.	.
2002	2,303	8,454	80,066	10,698	.	.
2003	x	9,007	86,275	11,087	.	.
2004	x	9,719	89,540	11,831	.	.
2005	1,965	11,030	95,300	13,281	.	.
2006	x	12,785	107,539	14,817	.	.
2007	x	13,480	111,054	16,235	.	.
2008	x	15,406	111,322	18,273	.	.
2009	x	14,862	102,949	15,140	.	.
2010	x	16,662	105,031	15,747	.	.

Note(s): Data do not add up to Canada total because of unavailable data for some provinces or territories.
Source(s): Statistics Canada, CANSIM table 281-0024.

Table 5.20
Gross domestic product of petroleum and coal products and primary metal manufacturing

	Total gross domestic product	Petroleum and coal products and primary metal manufacturing			
		Petroleum and coal products manufacturing	Primary metal manufacturing	Total	Share of total gross domestic product
	millions of current dollars				percent
1961	38,301	255	785	1,040	2.72
1971	90,792	291	1,607	1,898	2.09
1981	338,521	707	4,905	5,612	1.66
1991	636,082	2,814	5,810	8,624	1.36
2001	1,032,172	4,202	9,797	13,999	1.36
2002	1,068,765	3,477	11,087	14,564	1.36
2003	1,128,796	3,962	10,563	14,525	1.29
2004	1,201,306	4,608	12,931	17,539	1.46
2005	1,280,550	4,648	12,977	17,625	1.38
2006	1,354,353	4,778	14,908	19,686	1.45
2007	1,430,770	6,987	15,563	22,550	1.58

Source(s): Statistics Canada, CANSIM tables 379-0023 and 379-0024.

Table 5.21
Production of selected minerals and fuels by province and territory, 2009[p]

	Total metallic minerals	Selected metallic minerals						
		Copper	Gold	Iron ore	Nickel	Silver	Uranium	Zinc
	millions of current dollars							
Canada	**16,151.49**	**2,774.67**	**3,364.92**	**3,174.19**	**2,238.64**	**325.75**	**1,392.09**	**1,242.56**
Newfoundland and Labrador	2,244.08	222.52	4.12	1,472.63	476.59	4.90	0.00	36.04
Prince Edward Island	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nova Scotia	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
New Brunswick	749.60	45.84	7.36	0.00	0.00	98.68	0.00	459.72
Quebec	4,624.39	166.42	976.35	x	478.24	83.15	0.00	358.66
Ontario	3,789.98	685.52	1,835.83	0.00	752.62	73.88	0.00	195.87
Manitoba	1,176.77	282.65	139.44	0.00	531.21	19.75	0.00	141.83
Saskatchewan	1,441.20	0.00	49.08	0.00	0.00	0.04	1,392.09	0.00
Alberta	1.97	0.00	1.97	0.00	0.00	0.00	0.00	0.00
British Columbia	1,828.38	1,213.41	269.55	x	0.00	39.89	0.00	50.43
Yukon	245.02	158.32	81.23	0.00	0.00	5.47	0.00	0.00
Northwest Territories	50.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nunavut	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

	Total non-metallic minerals	Selected non-metallic minerals			Total fuels	Selected fuels		
		Potash [1]	Diamonds	Sand and gravel [2]		Coal	Crude petroleum	Natural gas [3]
	millions of current dollars							
Canada	**11,455.59**	**3,380.28**	**1,684.30**	**1,487.44**	**83,445.33**	**4,544.42**	**57,967.55**	**20,933.36**
Newfoundland and Labrador	45.72	0.00	0.00	7.77	6,618.54	0.00	6,618.54	0.00
Prince Edward Island	3.39	0.00	0.00	1.42	0.00	0.00	0.00	0.00
Nova Scotia	380.08	0.00	0.00	24.87	633.07	0.00	201.85	431.22
New Brunswick	x	x	0.00	14.41	x	x	0.00	60.22
Quebec	1,592.68	0.00	0.00	97.03	0.00	0.00	0.00	0.00
Ontario	2,540.16	0.00	236.36	486.14	70.07	0.00	38.12	31.95
Manitoba	143.73	0.00	0.00	55.63	622.07	0.00	622.07	0.00
Saskatchewan	x	x	0.00	62.29	x	x	8,977.13	741.92
Alberta	951.86	0.00	0.00	501.89	57,451.34	1061.69	40,584.93	15,804.72
British Columbia	588.68	0.00	0.00	228.27	7,733.98	3,316.51	586.61	3,830.86
Yukon	5.94	0.00	0.00	5.94	6.22	0.00	0.00	6.22
Northwest Territories	1,459.53	0.00	1,447.94	1.80	364.56	0.00	338.31	26.24
Nunavut	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

1. Shipments of potash to Canadian potassium sulphate plants are not included in this table.
2. Mineral production of sand and gravel for Nunavut is included in Northwest Territories.
3. Includes natural gas by-products.

Note(s): Figures may not add up to totals due to rounding.

Source(s): Natural Resources Canada, Minerals and Mining Statistics Division, 2010, *Canada's Mineral Production, Preliminary Estimates, 2009*, Statistics Canada Catalogue no. 26-202-X, *http://mmsd.mms.nrcan.gc.ca/stat-stat/26series/lis-lis-eng.aspx* (accessed February 11, 2011). Statistics Canada, Manufacturing and Energy Division, 2011, special tabulation.

Table 5.22
Reserves of selected major metals

	Copper	Nickel	Lead	Zinc	Gold	Silver
	thousands of tonnes					
1977	16,471	7,070	8,954	26,953	0.5	31.0
1978	15,840	7,245	8,930	26,721	0.5	31.0
1979	16,405	7,304	8,992	26,581	0.6	32.1
1980	16,831	8,013	9,637	27,742	0.8	33.8
1981	15,815	7,581	9,380	26,833	0.9	32.1
1982	17,022	7,339	9,139	26,216	0.8	31.2
1983	16,170	7,340	9,054	26,450	1.2	30.2
1984	15,970	7,222	8,887	26,204	1.2	31.5
1985	14,384	7,047	8,012	23,747	1.3	28.8
1986	13,331	6,704	7,167	22,423	1.5	26.7
1987	12,939	6,606	6,694	20,636	1.7	25.6
1988	12,683	6,279	6,969	21,116	1.9	27.0
1989	12,258	6,133	6,941	21,688	1.7	26.8
1990	11,203	5,792	6,317	20,091	1.5	23.2
1991	11,115	5,691	4,956	16,448	1.4	19.1
1992	10,818	5,605	4,348	15,067	1.4	16.3
1993	9,784	5,408	4,152	14,213	1.3	15.7
1994	9,533	5,334	3,861	14,514	1.5	19.1
1995	9,250	5,832	3,660	14,712	1.5	19.1
1996	9,667	5,623	3,450	13,660	1.7	18.9
1997	9,032	5,122	2,344	10,588	1.5	16.7
1998	8,402	5,683	1,845	10,159	1.4	15.7
1999	7,763	4,983	1,586	10,210	1.3	15.4
2000	7,419	4,782	1,315	8,896	1.1	13.9
2001	6,666	4,335	970	7,808	1.1	12.6
2002	6,774	4,920	872	6,871	1.0	11.2
2003	6,037	4,303	749	6,251	1.0	9.2
2004	5,546	3,846	667	5,299	0.8	6.6
2005	6,589	3,960	552	5,063	1.0	6.7
2006	6,923	3,940	737	6,055	1.0	6.9
2007	7,565	3,778	682	5,984	1.0	6.6
2008	7,456	3,605	636	5,005	0.9	5.7

Source(s): Statistics Canada, CANSIM tables 153-0020, 153-0021, 153-0023, 153-0025, 153-0027 and 153-0028.

Table 5.23
Annual production of metals and non-fuel minerals

	Copper	Nickel	Lead	Zinc	Iron ore	Gold	Potash	Salt	Gypsum
	thousands of tonnes								
1953	230	130	176	364	5,906	0.13	..	866	3,483
1954	274	146	198	342	6,678	0.14	..	880	3,584
1955	296	159	184	393	14,772	0.14	..	1,129	4,234
1956	322	162	171	384	20,274	0.14	..	1,443	4,440
1957	326	170	165	375	20,205	0.14	..	1,607	4,151
1958	313	126	169	386	14,267	0.14	..	2,155	3,596
1959	358	169	169	359	22,215	0.14	..	2,985	5,335
1960	398	195	186	369	19,550	0.14	..	3,007	4,722
1961	398	211	209	377	18,469	0.14	..	2,945	4,478
1962	415	211	195	420	24,820	0.13	..	3,301	4,836
1963	416	200	184	424	27,300	0.12	..	3,377	5,409
1964	444	207	185	611	34,857	0.12	..	3,618	5,770
1965	462	242	268	747	36,181	0.11	1,335	4,159	5,718
1966	461	203	276	872	36,914	0.10	1,979	3,746	5,421
1967	547	224	285	994	37,788	0.09	2,389	4,532	4,549
1968	574	240	309	1,052	43,040	0.09	2,576	4,413	5,378
1969	520	194	289	1,096	36,337	0.08	3,161	4,199	5,782
1970	610	278	353	1,136	47,458	0.07	3,108	4,919	5,733
1971	654	267	368	1,134	42,957	0.07	3,558	5,061	6,081
1972	720	235	335	1,129	38,736	0.06	3,495	4,902	7,349
1973	824	249	342	1,227	47,498	0.06	4,454	5,047	7,610
1974	821	269	294	1,127	46,784	0.05	5,776	5,447	7,226
1975	720	240	315	1,004	44,742	0.05	4,726	5,123	5,746
1976	731	241	256	982	55,416	0.05	5,215	5,994	6,003
1977	759	232	281	1,071	53,621	0.05	5,764	6,039	7,231
1978	659	128	320	1,067	42,931	0.05	6,344	6,452	8,074
1979	636	126	311	1,100	59,617	0.05	7,074	6,881	8,099
1980	710	188	280	920	50,224	0.05	7,225	7,226	7,285
1981	691	160	268	911	49,551	0.05	6,549	7,239	7,025
1982	612	89	272	966	33,198	0.06	5,309	7,930	5,986
1983	653	125	272	988	32,959	0.07	6,294	8,602	7,507
1984	722	174	264	1,063	39,930	0.08	7,527	10,235	7,775
1985	739	170	268	1,049	39,502	0.09	6,661	10,085	7,761
1986	699	164	334	988	36,167	0.10	6,753	10,740	8,802
1987	794	189	373	1,158	37,804	0.12	7,668	10,129	9,095
1988	758	199	351	1,370	39,934	0.13	8,154	10,687	9,513
1989	704	196	269	1,273	39,445	0.16	7,014	11,158	8,195
1990	771	195	233	1,179	35,670	0.17	7,345	11,191	7,977
1991	780	188	248	1,083	35,917	0.18	7,087	11,871	6,729
1992	762	178	340	1,196	32,137	0.16	7,040	11,088	7,293
1993	711	178	183	991	33,774	0.15	6,880	10,993	7,564
1994	591	142	168	976	36,728	0.15	8,517	12,244	8,586
1995	701	172	204	1,095	37,024	0.15	8,855	10,957	8,055
1996	652	182	242	1,163	34,709	0.16	8,120	12,248	8,201
1997	648	181	171	1,027	39,293	0.17	9,235	13,497	8,628
1998	691	198	150	992	36,847	0.16	8,884	13,034	8,307
1999	582	177	155	963	33,990	0.16	8,475	12,686	9,347
2000	622	181	143	936	35,247	0.15	9,033	12,164	8,572
2001	614	184	150	1,012	27,119	0.16	8,237	13,725	7,820
2002	584	180	101	924	30,902	0.15	8,361	12,736	8,810
2003	541	155	93	757	33,322	0.14	9,229	13,718	8,380
2004	544	177	73	734	28,596	0.13	10,332	14,096	9,204
2005	577	193	73	619	30,386	0.12	10,140	13,463	8,569
2006	586	225	79	601	33,543	0.10	8,518	14,460	9,036
2007	577	244	70	594	32,774	0.10	11,085	11,970	7,562
2008	584	246	87	705	32,102	0.09	10,379	14,224	5,818
2009	481	132	72	669	31,704	0.10	4,321	14,456	3,548
2010	508	153	60	606	36,058	0.09	9,729	10,257	2,788

Note(s): Refers to the recoverable metal in concentrates shipped, with the exception of iron ore where the quantity of ore mined is the determining factor.
Source(s): Statistics Canada, CANSIM tables 152-0001 and 152-0004.

Table 5.24
Primary energy consumption indicators

	Population	Gross domestic product	Primary energy [1]	Energy consumption per capita	Energy consumption per dollar of real gross domestic product
	millions	millions of chained 2002 dollars	terajoules	gigajoules per person	megajoules per chained 2002 dollar
1980	24,515,667	625,414	8,214,887	335.1	13.1
1981	24,819,915	647,323	7,862,627	316.8	12.1
1982	25,116,942	628,816	7,381,457	293.9	11.7
1983	25,366,451	645,906	7,299,903	287.8	11.3
1984	25,607,053	683,462	7,737,547	302.2	11.3
1985	25,842,116	716,132	7,908,762	306.0	11.0
1986	26,100,278	733,468	7,834,444	300.2	10.7
1987	26,446,601	764,664	8,122,249	307.1	10.6
1988	26,791,747	802,702	8,660,052	323.2	10.8
1989	27,276,781	823,728	8,945,237	327.9	10.9
1990	27,691,138	825,318	9,229,938	333.3	11.2
1991	28,037,420	808,051	9,090,962	324.2	11.3
1992	28,371,264	815,123	9,176,260	323.4	11.3
1993	28,684,764	834,185	9,314,103	324.7	11.2
1994	29,000,663	874,261	9,564,313	329.8	10.9
1995	29,302,311	898,814	9,695,204	330.9	10.8
1996	29,610,218	913,364	10,097,156	341.0	11.1
1997	29,905,948	951,962	10,200,117	341.1	10.7
1998	30,155,173	990,968	10,194,873	338.1	10.3
1999	30,401,286	1,045,786	10,518,257	346.0	10.1
2000	30,685,730	1,100,515	10,830,985	353.0	9.8
2001	31,019,020	1,120,146	10,950,393	353.0	9.8
2002	31,353,656	1,152,905	11,163,501	356.1	9.7
2003	31,639,670	1,174,592	11,478,526	362.8	9.8
2004	31,940,676	1,211,239	11,527,500	360.9	9.5
2005	32,245,209	1,247,807	11,307,113	350.7	9.1
2006	32,576,074	1,283,033	11,176,879	343.1	8.7
2007	32,929,733	1,311,260	11,969,050	363.5	9.1
2008	33,315,976	1,320,291	11,179,124	335.5	8.5
2009	33,720,184	1,283,722	10,962,914	325.1	8.5

1. Defined as the amount that was available for use in the Canadian economy. Includes the use of energy resources for non-energy purposes (for example, petrochemical feedstocks in fertilizer production). Excludes the use of wood and wastes as energy sources.

Source(s): Statistics Canada, CANSIM tables 051-0001, 128-0002, 128-0009 and 380-0017.

Table 5.25
Production and availability of primary energy resources

	Total coal		Crude oil		Natural gas [1]		Electricity [2]		Total	
	Production	Availability [3]	Production	Availability [3]	Production	Availability [3]	Production	Availability [3]	Production	Availability [3]
	terajoules									
1982	1,028,279	1,001,681	3,052,121	3,359,122	3,163,161	2,040,386	1,093,191	980,277	8,336,752	7,381,466
1983	1,066,011	1,048,015	3,232,271	3,201,037	2,980,532	2,027,274	1,150,257	1,020,347	8,429,071	7,296,673
1984	1,396,400	1,167,377	3,430,899	3,183,745	3,311,332	2,292,108	1,235,057	1,094,325	9,373,688	7,737,555
1985	1,487,132	1,122,086	3,516,525	3,085,568	3,622,687	2,532,461	1,313,821	1,168,658	9,940,165	7,908,773
1986	1,382,118	1,039,979	3,531,205	3,055,190	3,458,952	2,480,595	1,381,010	1,258,688	9,753,285	7,834,452
1987	1,393,936	1,117,744	3,690,859	3,172,058	3,766,024	2,574,349	1,416,413	1,258,110	10,267,232	8,122,261
1988	1,614,195	1,200,307	3,877,941	3,359,461	4,313,054	2,809,862	1,390,669	1,290,430	11,195,859	8,660,060
1989	1,718,400	1,197,786	3,769,304	3,423,980	4,552,627	3,025,526	1,331,644	1,297,953	11,371,975	8,945,245
1990	1,673,101	1,136,171	3,765,187	3,874,090	4,574,109	2,899,032	1,321,912	1,320,656	11,334,309	9,229,949
1991	1,747,976	1,099,786	3,765,443	3,726,587	4,805,528	2,922,760	1,408,181	1,341,838	11,727,128	9,090,971
1992	1,553,530	1,120,353	3,931,692	3,615,091	5,298,028	3,116,689	1,414,322	1,324,135	12,197,572	9,176,268
1993	1,651,313	994,715	4,116,941	3,741,690	5,832,901	3,196,872	1,479,535	1,380,835	13,080,690	9,314,112
1994	1,735,269	1,054,689	4,299,874	3,808,804	6,331,888	3,312,684	1,546,239	1,388,145	13,913,270	9,564,322
1995	1,800,811	1,056,083	4,457,769	3,801,848	6,711,568	3,434,306	1,532,656	1,402,976	14,502,804	9,695,213
1996	1,832,286	1,099,131	4,590,726	3,984,463	6,932,462	3,563,509	1,585,629	1,450,067	14,941,103	10,097,170
1997	1,897,322	1,168,601	4,842,646	4,087,294	7,012,563	3,540,975	1,531,890	1,403,258	15,284,421	10,200,128
1998	1,651,482	1,287,709	5,021,730	4,090,494	7,269,299	3,488,847	1,426,237	1,327,829	15,368,748	10,194,879
1999	1,589,310	1,278,044	4,788,758	4,167,500	7,498,476	3,695,016	1,481,669	1,377,703	15,358,213	10,518,263
2000	1,509,905	1,330,940	4,999,607	4,251,781	7,734,303	3,852,022	1,524,557	1,396,249	15,768,372	10,830,992
2001	1,532,994	1,421,952	5,056,168	4,388,726	7,857,807	3,775,073	1,447,914	1,364,650	15,894,883	10,950,401
2002	1,429,897	1,322,247	5,359,627	4,454,025	7,876,101	3,955,247	1,505,333	1,431,988	16,170,958	11,163,507
2003	1,326,114	1,398,121	5,679,573	4,631,977	7,708,115	4,015,753	1,457,123	1,432,678	16,170,925	11,478,529
2004	1,415,738	1,252,140	5,869,418	4,762,714	7,746,364	4,029,335	1,522,225	1,483,313	16,553,745	11,527,502
2005	1,400,510	1,326,344	5,632,426	4,507,267	7,848,271	3,950,690	1,608,679	1,522,814	16,489,886	11,307,115
2006	1,419,137	1,299,187	5,905,079	4,435,526	7,891,561	3,911,296	1,599,675	1,530,872	16,815,452	11,176,881
2007	1,506,158	1,354,327	6,341,361	4,654,422	7,661,142	4,235,796	1,639,202	1,527,779	17,147,863	11,772,324
2008	1,490,152	1,209,351	5,916,116	4,218,523	7,287,941	4,178,789	..	..	..	..
2009	1,361,322	975,555	5,447,476	4,418,678	6,871,185	4,043,892	..	..	..	..

1. Includes natural gas liquids (ethane, butane, propane and pentanes plus).
2. Includes primary steam.
3. Defined as the amount that was available for use in the Canadian economy. Includes the use of energy resources for non-energy purposes (for example, petrochemical feedstocks in fertilizer production).

Source(s): Statistics Canada, CANSIM tables 128-0002 and 128-0009.

Table 5.26
Primary energy production, exports and imports

	Production	Exports	Imports
	petajoules		
1980	8,567.9	2,067.5	1,720.6
1981	8,257.6	1,958.3	1,592.1
1982	8,336.7	2,123.2	1,237.5
1983	8,431.5	2,225.2	1,015.9
1984	9,373.7	2,676.5	1,107.6
1985	9,940.2	3,201.6	1,081.4
1986	9,753.3	3,121.7	1,219.3
1987	10,267.2	3,484.7	1,339.4
1988	11,195.9	4,108.3	1,551.4
1989	11,372.0	4,138.0	1,599.2
1990	11,495.4	4,621.7	1,715.1
1991	11,887.9	4,998.0	1,628.9
1992	12,196.2	5,246.8	1,625.0
1993	13,077.8	5,653.8	1,644.9
1994	13,913.3	6,348.6	1,749.7
1995	14,489.2	6,878.6	1,682.5
1996	14,800.3	6,950.2	1,977.2
1997	15,284.4	7,496.4	2,231.8
1998	15,368.7	7,818.3	2,385.3
1999	15,358.2	7,824.0	2,518.5
2000	15,768.4	8,328.4	2,852.2
2001	15,894.9	8,443.8	3,013.4
2002	16,171.0	8,561.9	2,923.6
2003	16,170.9	8,499.0	3,459.8
2004	16,553.7	8,822.7	3,107.6
2005	16,489.9	8,662.2	3,139.2
2006	16,815.5	8,898.6	2,977.4
2007	17,147.9	9,331.0	3,124.1
2008	16,380.0	9,301.6	3,010.4
2009	15,325.6	7,902.0	2,944.8

Source(s): Statistics Canada, CANSIM tables 128-0002 and 128-0009.

Table 5.27
Established energy resource reserves

	Coal [1]		Crude oil		Crude bitumen		Natural gas [2]		Uranium	
	Reserves	Reserve life	Reserves	Reserve life	Reserves	Reserve life	Reserves	Reserve life	Reserves	Reserve life
	megatonnes	years	millions of cubic metres	years	millions of cubic metres	years	billions of cubic metres	years	kilotonnes	years
1976	4,310.7	169	1,014.6	14	150.7	40	1,738.1	26	405	74
1977	4,117.0	144	969.1	13	111.2	33	1,790.2	25	415	72
1978	4,092.6	134	942.7	13	321.5	68	1,911.2	25	438	53
1979	4,021.8	121	903.3	11	353.1	48	1,977.0	24	468	72
1980	4,192.5	114	860.7	11	333.9	32	2,028.3	28	444	66
1981	4,159.9	104	827.8	12	325.0	37	2,084.8	27	340	45
1982	5,704.0	133	780.6	12	315.6	34	2,147.7	31	376	49
1983	5,981.0	134	792.4	12	310.4	18	2,125.9	29	333	49
1984	6,120.6	107	776.3	11	328.8	28	2,106.1	27	260	25
1985	6,011.8	99	790.5	11	343.4	22	2,079.8	25	263	25
1986	6,338.9	110	774.6	11	574.4	30	2,032.1	26	265	23
1987	6,583.5	108	753.6	11	572.5	28	1,955.3	25	258	19
1988	6,542.3	93	739.2	10	566.5	26	1,931.2	19	248	21
1989	6,472.6	92	707.8	10	542.2	23	1,957.1	19	249	23
1990	6,580.7	96	657.3	10	524.0	23	1,978.6	18	295	30
1991	6,545.2	92	614.9	9	501.7	22	1,965.2	20	305	37
1992	6,522.1	99	590.4	8	482.2	20	1,929.1	15	309	34
1993	6,449.4	93	582.2	7	457.6	19	1,859.9	13	313	36
1994	6,372.2	88	544.5	7	565.0	24	1,832.7	13	300	27
1995	6,293.4	84	553.0	7	574.0	20	1,840.9	12	484	47
1996	6,210.7	82	526.7	7	660.8	24	1,725.9	11	430	38
1997	6,132.0	78	532.2	7	614.0	19	1,620.4	10	419	38
1998	6,056.9	81	673.5	8	1,336.0	35	1,562.2	10	433	43
1999	5,502.1	76	642.5	8	1,891.1	53	1,526.8	9	417	41
2000	4,722.8	68	667.3	8	1,860.0	48	1,614.5	9	437	44
2001	4,555.3	67	644.7	8	1,830.0	44	1,547.8	9	452	35
2002	4,485.3	66	606.1	7	1,840.0	38	1,529.6	9	439	34
2003	4,406.4	71	590.0	7	1,720.0	31	1,469.5	9	429	43
2004	4,666.3	66	603.8	8	1,660.0	26	1,497.5	9	444	39
2005	4,560.4	68	752.3	10	1,620.0	28	1,553.7	9	431	34
2006	4,468.8	68	712.6	9	3,340.0	51	1,577.7	9	423	43
2007	4,026.6	58	721.8	9	3,500.0	50	1,534.3	9	482	53
2008	3,953.5	58	688.8	9	4,300.0	57	1,671.2	10	447	50
2009	3,978.6	63	622.5	9	4,220.0	54	1,701.2	11	383	38

1. Includes bituminous, sub-bituminous and lignite coal.
2. Includes natural gas liquids (ethane, butane, propane and pentanes plus).

Source(s): Statistics Canada, CANSIM tables 153-0012, 153-0013, 153-0014, 153-0017, 153-0018 and 153-0019. Statistics Canada, Environment Accounts and Statistics Division, 2011, special tabulation.

Table 5.28

Installed generating capacity and generation of electric energy by province and territory, 2006

	Installed generating capacity				
	Total	Hydro	Thermal [1]	Nuclear	Wind and tidal
	megawatts				
Canada	**123,792**	**72,661**	**36,324**	**13,345**	**1,463**
Newfoundland and Labrador	7,494	6,777	717	0	0
Prince Edward Island	171	0	158	0	14
Nova Scotia	2,463	404	2,006	0	53
New Brunswick	4,549	936	2,933	680	0
Quebec	40,219	36,686	2,536	675	322
Ontario	32,521	8,349	11,769	11,990	414
Manitoba	5,629	5,024	501	0	104
Saskatchewan	3,879	855	2,853	0	171
Alberta	11,736	924	10,427	0	385
British Columbia	14,828	12,598	2,230	0	0
Yukon	108	77	30	0	1
Northwest Territories	142	31	111	0	0
Nunavut	54	0	54	0	0
	Generation of electric energy				
	Total	Hydro	Thermal [1]	Nuclear	Wind and tidal
	megawatt hours				
Canada	**592,007,821**	**349,469,015**	**147,653,525**	**92,418,514**	**2,466,767**
Newfoundland and Labrador	42,768,071	41,709,866	1,058,205	0	0
Prince Edward Island	42,500	0	6,251	0	36,249
Nova Scotia	11,453,829	1,019,420	10,305,730	0	128,679
New Brunswick	18,204,620	3,730,625	10,107,532	4,366,463	0
Quebec	180,247,851	172,591,117	2,642,745	4,595,198	418,791
Ontario	158,023,212	36,032,893	38,388,999	83,456,853	144,467
Manitoba	34,479,065	33,650,538	503,412	0	325,115
Saskatchewan	19,665,130	4,031,938	15,060,990	0	572,202
Alberta	64,108,428	1,868,916	61,398,827	0	840,685
British Columbia	61,858,017	54,247,228	7,610,789	0	0
Yukon	359,031	334,608	23,844	0	579
Northwest Territories	653,358	251,866	401,492	0	0
Nunavut	144,709	0	144,709	0	0

1. Includes steam, internal combustion and combustion turbine.

Source(s): Statistics Canada, Manufacturing and Energy Division, 2008, *Electric Power Generation, Transmission and Distribution, 2006*, Catalogue no. 57-202-X.

Table 5.29
Hydro-electric power generation by province and territory

	1998			2010		
	Total hydro generation	Overall total generation	Hydro as share of total	Total hydro generation	Overall total generation	Hydro as share of total
	megawatt hours		percent	megawatt hours		percent
Canada	**327,671,116**	**543,933,655**	**60.2**	**346,716,999**	**551,502,412**	**62.9**
Newfoundland and Labrador	43,644,354	45,116,350	96.7	39,618,254	40,761,074	97.2
Prince Edward Island	.	2,593	.	.	354,210	.
Nova Scotia	929,167	10,756,709	8.6	1,002,036	11,662,894	8.6
New Brunswick	2,819,735	18,990,320	14.8	3,296,460	11,073,413	29.8
Quebec	147,947,077	154,734,529	95.6	178,860,273	184,094,446	97.2
Ontario	34,384,442	141,321,275	24.3	32,624,667	141,291,724	23.1
Manitoba	30,794,990	31,738,166	97.0	33,269,121	33,442,834	99.5
Saskatchewan	3,660,089	16,947,991	21.6	3,866,710	22,062,289	17.5
Alberta	2,110,036	55,603,128	3.8	416,913	45,599,116	0.9
British Columbia	60,848,577	67,709,737	89.9	53,153,339	59,868,227	88.8
Yukon	275,726	317,545	86.8	380,434	404,141	94.1
Northwest Territories including Nunavut	256,923	695,312	37.0	..	..	..
Northwest Territories	..	..	..	228,792	722,675	31.7
Nunavut	..	..	..	..	165,369	..

Note(s): Figures may not add up to totals due to rounding.
Source(s): Statistics Canada, CANSIM tables 127-0001 and 127-0002.

Table 5.30
Energy consumed in thermal-electric power stations by fuel type

	Coal					Fuel oil		Natural gas	Wood
	Canadian bituminous	Imported bituminous	Canadian sub-bituminous	Imported sub-bituminous	Lignite	Heavy	Light and diesel		
	terajoules								
1980	108,955	249,422	183,478	..	77,541	105,286	12,619	71,159	..
1981	123,737	261,758	196,493	..	83,624	70,106	11,105	51,057	..
1982	114,238	283,650	227,007	..	102,310	77,043	10,724	42,124	..
1983	126,315	279,586	254,165	..	121,137	45,627	9,559	33,454	..
1984	139,267	297,373	290,931	..	131,173	42,030	9,210	23,619	..
1985	145,449	227,090	317,016	..	134,416	47,958	9,104	23,259	..
1986	119,666	188,934	321,289	..	117,393	43,598	9,175	17,316	..
1987	151,508	229,026	340,572	..	142,376	75,702	9,987	20,619	..
1988	162,522	244,213	364,652	..	170,660	99,195	8,504	40,419	..
1989	163,602	245,290	369,774	..	155,005	154,053	12,136	102,753	..
1990	150,746	183,215	384,276	..	134,968	137,048	12,158	50,530	..
1991	170,019	212,996	430,106	..	131,390	112,131	11,813	41,525	..
1992	159,353	195,313	392,792	..	141,328	132,502	10,346	99,820	..
1993	141,190	118,909	436,468	..	144,378	93,734	11,104	126,992	..
1994	123,014	131,018	478,936	..	150,410	70,834	9,909	154,846	..
1995	122,419	146,541	477,598	..	153,209	79,934	11,088	149,890	..
1996	132,402	169,149	458,122	..	159,646	61,305	10,418	105,074	..
1997	112,114	216,821	475,008	22,193	169,137	99,336	8,691	154,899	..
1998	90,160	281,115	468,503	40,004	177,657	147,675	8,015	200,450	14,959
1999	84,148	300,861	445,127	63,881	170,501	119,554	7,782	204,930	17,112
2000	47,231	381,795	437,491	126,800	166,262	108,955	7,632	273,301	21,024
2001	51,580	351,178	450,912	140,385	169,140	127,541	8,172	333,946	27,293
2002	45,823	305,444	465,280	143,415	166,599	111,800	7,178	278,613	27,620
2003	40,062	309,723	463,203	139,640	167,154	137,307	8,540	241,835	25,365
2004	115,245	249,906	371,637	107,083	169,817	131,109	8,760	267,009	35,105
2005	70,588	252,126	408,500	141,568	160,482	112,317	8,743	307,598	27,125
2006	24,780	205,244	464,403	134,471	154,290	56,835	10,109	330,080	34,324

Source(s): Statistics Canada, Manufacturing and Energy Division, *Electric Power Generation, Transmission and Distribution*, Catalogue no. 57-202-X, various issues.

Table 5.31

Net energy generation in thermal-electric power stations by fuel type

	Coal					Fuel oil		Natural gas	Wood
	Canadian bituminous	Imported bituminous	Canadian sub-bituminous	Imported sub-bituminous	Lignite	Heavy	Light and diesel		
	terajoules								
1980	34,102	89,540	58,612	..	21,133	34,564	3,102	19,175	..
1981	36,693	92,867	62,547	..	22,972	22,451	3,256	13,097	..
1982	37,070	100,930	71,820	..	27,892	25,852	3,062	11,030	..
1983	40,109	100,592	80,439	..	33,222	14,658	2,791	8,615	..
1984 [1]	46,928	106,065	90,662	..	38,555	13,554	2,735	5,777	..
1985	48,576	80,331	98,869	..	38,025	15,419	2,710	5,773	..
1986 [1]	42,038	69,406	109,398	..	36,947	15,385	2,865	4,349	..
1987 [1]	53,808	84,830	116,663	..	45,297	27,065	2,995	5,649	..
1988 [1]	58,411	90,953	125,044	..	52,989	35,833	2,463	11,727	..
1989 [1]	58,285	91,097	123,637	..	48,603	54,493	3,913	32,494	..
1990 [1]	53,613	66,888	132,608	..	42,661	49,113	3,715	14,887	..
1991 [1]	57,684	74,519	139,965	..	40,808	39,965	3,434	12,327	..
1992 [1]	56,474	71,853	145,984	..	44,792	46,861	3,193	30,620	..
1993 [1]	50,148	42,944	150,070	..	46,265	33,537	3,541	42,180	..
1994	41,040	44,603	152,382	..	44,731	23,307	3,097	45,040	..
1995	41,244	49,124	152,976	..	45,861	26,223	3,895	52,634	..
1996	44,809	58,752	148,520	..	46,909	19,591	3,327	35,011	..
1997	38,510	76,698	153,122	7,745	49,155	33,222	2,724	54,897	..
1998	30,623	104,460	152,275	13,959	52,801	48,659	2,581	69,600	5,987
1999	28,498	107,224	145,601	22,418	49,652	39,708	2,367	72,474	6,055
2000	14,770	132,830	143,509	42,042	49,995	36,002	2,159	95,844	6,590
2001	16,727	115,049	146,051	40,027	50,929	42,052	2,398	114,738	7,313
2002	13,844	103,636	152,767	47,306	50,257	37,481	2,111	100,130	7,487
2003	11,545	102,218	148,987	48,595	54,613	45,977	2,624	85,489	7,613
2004	38,262	84,545	119,995	34,758	53,518	43,709	2,691	94,532	6,842
2005	22,696	85,370	133,213	46,676	50,056	36,827	2,680	110,699	6,412
2006	7,168	68,368	140,790	44,444	48,151	18,965	3,061	116,069	6,704

1. Energy required to service generating stations was not deducted to calculate net generation.

Source(s): Statistics Canada, Manufacturing and Energy Division, *Electric Power Generation, Transmission and Distribution*, Catalogue no. 57-202-X, various issues.

Table 5.32
Efficiency of thermal-electric power stations by fuel type

	Coal					Fuel oil		Natural gas	Wood
	Canadian bituminous	Imported bituminous	Canadian sub-bituminous	Imported sub-bituminous	Lignite	Heavy	Light and diesel		
	percent								
1980	31	36	32	..	27	33	25	27	..
1981	30	35	32	..	27	32	29	26	..
1982	32	36	32	..	27	34	29	26	..
1983	32	36	32	..	27	32	29	26	..
1984	34	36	31	..	29	32	30	24	..
1985	33	35	31	..	28	32	30	25	..
1986	35	37	34	..	31	35	31	25	..
1987	36	37	34	..	32	36	30	27	..
1988	36	37	34	..	31	36	29	29	..
1989	36	37	33	..	31	35	32	32	..
1990	36	37	35	..	32	36	31	29	..
1991	34	35	33	..	31	36	29	30	..
1992	35	37	37	..	32	35	31	31	..
1993	36	36	34	..	32	36	32	33	..
1994	33	34	32	..	30	33	31	29	..
1995	34	34	32	..	30	33	35	35	..
1996	34	35	32	..	29	32	32	33	..
1997	34	35	32	35	29	33	31	35	..
1998	34	37	33	35	30	33	32	35	40
1999	34	36	33	35	29	33	30	35	35
2000	31	35	33	33	30	33	28	35	31
2001	32	33	32	29	30	33	29	34	27
2002	30	34	33	33	30	34	29	36	27
2003	29	33	32	35	33	33	31	35	30
2004	33	34	32	32	32	33	31	35	19
2005	32	34	33	33	31	33	31	36	24
2006	29	33	30	33	31	34	30	35	20

Note(s): Efficiency is the electrical energy output as a percentage of primary energy input.
Source(s): Statistics Canada, Manufacturing and Energy Division, *Electric Power Generation, Transmission and Distribution*, Catalogue no. 57-202-X, various issues.

Section 6

Population

Population growth, distribution and density are major factors in determining the impacts that human activities have on the environment. Canada's population has expanded considerably since 1901, when there were 5.4 million Canadians (Table 6.1). However, growth rates have not been consistent over time. Two historical periods were characterized by high annual population growth rates. The first was from 1901 to 1911, when high immigration resulted in annual growth rates of up to 3%. The second period of high growth followed the end of the Second World War and is generally referred to as the 'baby boom.' In contrast two periods of slow economic activity (1891 to 1901 and 1931 to 1941) coincided with slumps in population growth rates.

Population growth is generally the result of two factors: natural increase and immigration. In the last few decades international migration has become a more important factor in population growth than natural increase (Table 6.2). Tables 6.3 and 6.4 present population statistics for Canada's broad ecozones.

Table 6.1
Total population by province and territory, selected census years

	1901	1911	1921	1931	1941	1951	1961
	thousands						
Canada	**5,371.3**	**7,206.6**	**8,787.8**	**10,376.7**	**11,506.7**	**14,009.4**	**18,238.3**
Newfoundland and Labrador	..	..	..	..	..	361.4	457.9
Prince Edward Island	103.3	93.7	88.6	88.0	95.0	98.4	104.6
Nova Scotia	459.6	492.3	523.8	512.8	578.0	642.6	737.0
New Brunswick	331.1	351.9	387.9	408.2	457.4	515.7	597.9
Quebec	1,648.9	2,005.8	2,360.5	2,874.7	3,331.9	4,055.7	5,259.2
Ontario	2,182.9	2,527.3	2,933.7	3,431.7	3,787.7	4,597.6	6,236.1
Manitoba	255.2	461.4	610.1	700.1	729.7	776.5	921.7
Saskatchewan	91.3	492.4	757.5	921.8	896.0	831.7	925.2
Alberta	73.0	374.3	588.5	731.6	796.2	939.5	1,332.0
British Columbia	178.7	392.5	524.6	694.3	817.8	1,165.2	1,629.1
Yukon	27.2	8.5	4.1	4.2	5.0	9.1	14.6
Northwest Territories	20.1 [1]	6.5 [1]	8.1 [1]	9.3 [1]	12.0 [1]	16.0 [1]	23.0 [1]
Nunavut	...	...	...	...	...	...	...

	1971	1981	1991	2001	2006	Change	
						1901 to 1951	1951 to 2006
	thousands					percent	
Canada	**21,962.0**	**24,819.9**	**28,037.4**	**31,019.0**	**32,576.1**	**161**	**133**
Newfoundland and Labrador	530.9	575.3	579.6	522.0	510.3	..	41
Prince Edward Island	112.6	123.6	130.4	136.7	137.9	-5	40
Nova Scotia	797.3	854.9	915.0	932.5	938.0	40	46
New Brunswick	642.5	706.4	745.6	749.8	745.7	56	45
Quebec	6,137.3	6,547.2	7,067.4	7,396.3	7,631.6	146	88
Ontario	7,849.0	8,812.3	10,431.3	11,896.7	12,665.3	111	175
Manitoba	998.9	1,035.5	1,109.6	1,151.4	1,184.0	204	52
Saskatchewan	932.0	975.8	1,002.7	1,000.2	992.1	811	19
Alberta	1,665.7	2,291.1	2,592.3	3,058.0	3,421.3	1,187	264
British Columbia	2,240.5	2,826.6	3,373.8	4,076.3	4,243.6	552	264
Yukon	19.0	23.9	28.9	30.2	32.3	-67	255
Northwest Territories	36.4 [1]	47.4 [1]	38.7	40.8	43.2	-20	...
Nunavut	...	...	22.2	28.1	30.8	...	...

1. Includes Nunavut.
Note(s): Figures may not add up to totals due to rounding.
Source(s): Statistics Canada, CANSIM tables 051-0001, 051-0024 and 075-0009.

Table 6.2
Components of population growth

	Population [1, 2]			Natural increase			International migration					
	Population at beginning period (July 1)	Population growth	Growth rate	Births	Deaths	Natural increase	Immigrants	Emigrants	Returning emigrants	Net temporary emigrants	Net non-permanent residents [3]	Net international migration
	thousands		percent	thousands								
1972/1973	22,218.5	273.3	1.2	345.8	162.6	183.2	138.5	63.8	36.1	..	8.0	..
1973/1974	22,491.8	316.2	1.4	342.4	166.3	176.2	217.5	83.5	36.7	..	-2.0	..
1974/1975	22,808.0	335.3	1.5	356.0	168.8	187.2	209.3	78.0	37.5	..	8.0	..
1975/1976	23,143.3	306.5	1.3	364.3	166.4	197.8	170.0	66.7	36.4	..	-3.0	..
1976/1977	23,449.8	276.0	1.2	357.8	165.7	192.1	130.9	57.8	32.8	..	-2.0	..
1977/1978	23,725.8	237.4	1.0	359.8	169.0	190.8	101.0	63.3	31.9	..	-3.0	..
1978/1979	23,963.2	238.3	1.0	362.4	165.8	196.6	84.5	62.4	31.5	..	8.0	..
1979/1980	24,201.5	314.1	1.3	367.3	171.5	195.8	143.8	49.9	29.4	..	15.0	..
1980/1981	24,515.7	304.2	1.2	372.1	170.5	201.6	127.2	44.9	27.0	..	13.3	..
1981/1982	24,819.9	297.0	1.2	372.5	172.4	200.1	135.3	54.8	25.7	..	12.3	..
1982/1983	25,116.9	249.5	1.0	373.6	176.5	197.1	101.4	59.2	28.1	..	3.8	..
1983/1984	25,366.5	240.6	0.9	374.5	174.2	200.4	88.6	57.8	26.0	..	5.1	..
1984/1985	25,607.1	235.1	0.9	376.3	179.1	197.2	83.9	55.2	27.1	..	3.7	..
1985/1986	25,842.1	258.2	1.0	375.4	183.4	192.0	88.7	50.6	25.8	..	22.4	..
1986/1987	26,100.3	346.3	1.3	373.0	182.6	190.4	130.9	47.7	16.7	..	58.7	..
1987/1988	26,446.6	345.1	1.3	370.0	189.9	180.1	152.2	41.0	14.3	..	42.2	..
1988/1989	26,791.7	485.0	1.8	384.0	188.4	195.6	177.6	40.4	14.1	..	140.7	..
1989/1990	27,276.8	414.4	1.5	403.3	192.6	210.7	203.4	39.8	13.9	..	28.8	..
1990/1991	27,691.1	346.3	1.2	402.9	192.4	210.5	221.4	43.7	15.2	..	-52.9	..
1991/1992	28,037.4	333.8	1.2	403.1	197.0	206.1	244.3	45.6	15.9	19.7	-42.9	151.9
1992/1993	28,371.3	313.5	1.1	392.2	201.8	190.4	266.9	44.0	15.3	19.7	-71.2	147.2
1993/1994	28,684.8	315.9	1.1	386.2	206.5	179.7	235.4	49.5	16.4	19.7	-22.2	160.3
1994/1995	29,000.7	301.6	1.0	382.0	209.4	172.6	220.7	52.1	18.4	19.7	-14.2	153.2
1995/1996	29,302.3	307.9	1.0	372.5	209.8	162.7	217.5	48.4	19.0	19.7	-0.8	167.5
1996/1997	29,610.2	295.7	1.0	357.3	217.2	140.1	224.9	52.8	19.0	25.6	0.2	165.6
1997/1998	29,905.9	249.2	0.8	345.1	217.7	127.4	194.5	51.8	18.7	25.6	-4.0	131.8
1998/1999	30,155.2	246.1	0.8	338.3	217.6	120.7	173.2	48.0	17.5	25.6	18.3	135.4
1999/2000	30,401.3	284.4	0.9	336.9	217.2	119.7	205.7	48.1	17.7	25.6	25.0	174.8
2000/2001	30,685.7	333.3	1.1	327.1	219.1	108.0	252.5	47.8	17.9	25.6	39.6	236.7
2001/2002	31,019.0	334.6	1.1	328.2	220.5	107.7	256.4	41.9	20.3	20.2	33.4	248.0
2002/2003	31,353.7	286.0	0.9	330.5	223.9	106.6	199.2	37.9	22.9	20.2	36.4	200.4
2003/2004	31,639.7	301.0	0.9	337.8	228.8	108.9	239.1	39.0	23.2	20.2	10.1	213.2
2004/2005	31,940.7	304.5	0.9	339.3	229.9	109.4	244.6	40.8	23.7	20.2	8.9	216.2
2005/2006	32,245.2	330.9	1.0	346.1	225.5	120.6	254.4	43.4	22.9	20.2	14.9	228.7
2006/2007	32,576.1	353.7	1.1	360.9	233.8	127.1	238.1	49.2	30.3	20.2	27.5	226.6
2007/2008	32,929.7	386.2	1.2	370.9	237.8	133.1	249.6	52.5	25.4	20.2	50.8	253.1
2008/2009	33,316.0	404.2	1.2	377.9	242.1	135.8	245.3	53.4	25.4	20.2	71.3	268.4
2009/2010	33,720.2	388.6	1.1	381.4	247.6	133.8	270.5	54.1	25.4	20.2	33.1	254.7
2010/2011	34,108.8	..	..	..	..	..	..	..	..	..	..	..

1. Postcensal estimates are based on the latest census counts adjusted for census net undercoverage, incompletely enumerated Indian reserves and for the estimated population growth that occurred since that census. Intercensal estimates are based on postcensal estimates and census counts adjusted for the censuses preceding and following the considered year.
2. Estimates are final intercensal up to 2005, final postcensal for 2006 and 2007, updated postcensal for 2008 and 2009 and preliminary postcensal for 2010.
3. The five following groups are referred to as NPRs: (1) persons residing in Canada claiming refugee status; (2) persons residing in Canada who hold a study permit; (3) persons residing in Canada who hold a work permit; (4) persons residing in Canada who hold a Minister's permit; (5) all non-Canadian born dependants of persons claiming refugee status, or of persons holding study permits, work permits or Minister's permits and living in Canada.

Note(s): Data are presented from July 1 to June 30. Population growth figures do not equal the sum of the natural increase and international migration. It is necessary to add the residual deviation to these data.

Source(s): Statistics Canada, CANSIM tables 051-0001 and 051-0004.

Table 6.3
Population by ecozone

	Area	Population				Density	
		1981	2001	2006	Change 1981 to 2006	1981	2006
	square kilometres	number				persons per 100 square kilometres	
Canada	**8,806,839**	**24,343,181**	**30,007,094**	**31,612,897**	**7,269,716**	**276.4**	**359.0**
Arctic Cordillera	234,708	821	1,304	1,293	472	0.3	0.6
Northern Arctic	1,371,340	11,872	20,451	22,859	10,987	0.9	1.7
Southern Arctic	702,542	8,137	14,470	15,893	7,756	1.2	2.3
Taiga Plains	569,363	18,358	20,726	22,225	3,867	3.2	3.9
Taiga Shield	1,122,504	30,859	38,116	41,682	10,823	2.7	3.7
Boreal Shield	1,640,949	2,731,344	2,821,808	2,886,412	155,068	166.4	175.9
Atlantic Maritime	192,017	2,428,735	2,537,685	2,554,089	125,354	1,264.9	1,330.1
Mixed Wood Plains	107,017	12,187,952	15,631,830	16,611,643	4,423,691	11,388.8	15,522.4
Boreal Plains	668,664	673,775	771,205	812,017	138,242	100.8	121.4
Prairies	443,159	3,499,494	4,222,569	4,514,106	1,014,612	789.7	1,018.6
Taiga Cordillera	264,213	563	370	411	-152	0.2	0.2
Boreal Cordillera	459,864	26,507	30,690	32,244	5,737	5.8	7.0
Pacific Maritime	196,200	2,014,790	3,027,206	3,215,775	1,200,985	1,026.9	1,639.0
Montane Cordillera	474,753	701,014	859,134	873,498	172,484	147.7	184.0
Hudson Plains	359,546	8,960	9,530	8,750	-210	2.5	2.4

Note(s): The area figures are for land area only and are calculated by taking the total ecozone area and subtracting the surface water area in the ecozone derived from the 1-km water fraction digital dataset. The total area of Canada excluding the Great Lakes is 9,886,215 km^2. Including the Canadian portion of the Great Lakes the total area of Canada is 9,976,182 km^2.

Source(s): Agriculture and Agri-Food Canada, and Environment Canada, 2003, *A National Ecological Framework for Canada*, *http://sis.agr.gc.ca/cansis/nsdb/ecostrat/gis_data.html* (accessed March 2, 2005). Fernandes, R., G. Pavlic, W. Chen and R. Fraser, 2001, *1-km Water Fraction From National Topographic Data Base Maps, Canada*, Natural Resources Canada, *www.geogratis.ca/geogratis/en/option/select.do?id=8C3D34AE-5BD5-A83C-DB8C-895FB4AD86C6* (accessed March 2, 2005). Statistics Canada, Environment Accounts and Statistics Division, Spatial Environmental Information System and Censuses of Population, 1981, 2001 and 2006.

Table 6.4
Population by provincial and territorial ecozone

	Area		Population					Density				
	1981 to 1999	1999 to 2006	1981	1991	2001	2006	Change 1981 to 2006	1981	1991	2001	2006	Change 1981 to 2006
	square kilometres		number					persons per square kilometre				percent
Canada	**8,806,839**	**8,806,839**	**24,343,181**	**27,296,859**	**30,007,094**	**31,612,897**	**7,269,716**	**2.8**	**3.1**	**3.4**	**3.6**	**29.9**
Newfoundland and Labrador												
Arctic Cordillera	17,318	17,318	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0
Boreal Shield	139,813	139,813	563,063	563,897	508,197	500,806	-62,257	4.0	4.0	3.6	3.6	-11.1
Taiga Shield	194,228	194,228	4,618	4,577	4,733	4,663	45	0.0	0.0	0.0	0.0	0.0
Total	**351,359**	**351,359**	**567,681**	**568,474**	**512,930**	**505,469**	**-62,212**	**1.6**	**1.6**	**1.5**	**1.4**	**-11.0**
Prince Edward Island												
Atlantic Maritime	5,402	5,402	122,506	129,765	135,294	135,851	13,345	22.7	24.0	25.0	25.1	10.9
Total	**5,402**	**5,402**	**122,506**	**129,765**	**135,294**	**135,851**	**13,345**	**22.7**	**24.0**	**25.0**	**25.1**	**10.9**
Nova Scotia												
Atlantic Maritime	50,633	50,633	847,442	899,942	908,007	913,462	66,020	16.7	17.8	17.9	18.0	7.8
Total	**50,633**	**50,633**	**847,442**	**899,942**	**908,007**	**913,462**	**66,020**	**16.7**	**17.8**	**17.9**	**18.0**	**7.8**
New Brunswick												
Atlantic Maritime	70,602	70,602	696,403	723,900	729,498	729,997	33,594	9.9	10.3	10.3	10.3	4.8
Total	**70,602**	**70,602**	**696,403**	**723,900**	**729,498**	**729,997**	**33,594**	**9.9**	**10.3**	**10.3**	**10.3**	**4.8**
Quebec												
Arctic Cordillera	12,360	12,360	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0
Atlantic Maritime	65,380	65,380	762,384	758,879	764,886	774,779	12,395	11.7	11.6	11.7	11.9	1.6
Boreal Shield	573,556	573,556	1,159,520	1,227,015	1,292,746	1,351,404	191,884	2.0	2.1	2.3	2.4	16.5
Hudson Plains	34,724	34,724	1,342	1,788	2,312	2,514	1,172	0.0	0.1	0.1	0.1	85.6
Mixed Wood Plains	27,220	27,220	4,501,391	4,894,723	5,160,906	5,398,949	897,558	165.4	179.8	189.6	198.3	19.9
Northern Arctic	33,599	33,599	932	1,461	1,842	2,097	1,165	0.0	0.0	0.1	0.1	122.9
Southern Arctic	123,968	123,968	2,156	3,257	4,017	4,630	2,474	0.0	0.0	0.0	0.0	119.7
Taiga Shield	437,194	437,194	10,678	8,840	10,770	11,758	1,080	0.0	0.0	0.0	0.0	12.1
Total	**1,308,002**	**1,308,002**	**6,438,403**	**6,895,963**	**7,237,479**	**7,546,131**	**1,107,728**	**4.9**	**5.3**	**5.5**	**5.8**	**17.2**
Ontario												
Boreal Shield	559,603	559,603	933,099	952,438	933,908	943,313	10,214	1.7	1.7	1.7	1.7	1.1
Hudson Plains	254,963	254,963	5,447	5,789	5,214	4,275	-1,172	0.0	0.0	0.0	0.0	-20.2
Mixed Wood Plains	79,798	79,798	7,686,561	9,126,658	10,470,924	11,212,694	3,526,133	96.3	114.4	131.2	140.5	45.9
Total	**894,364**	**894,364**	**8,625,107**	**10,084,885**	**11,410,046**	**12,160,282**	**3,535,175**	**9.6**	**11.3**	**12.8**	**13.6**	**41.0**
Manitoba												
Boreal Plains	83,667	83,667	104,579	110,298	116,672	120,760	16,181	1.3	1.3	1.4	1.4	15.5
Boreal Shield	216,334	216,334	65,707	68,052	72,277	75,945	10,238	0.3	0.3	0.3	0.4	15.5
Hudson Plains	66,685	66,685	2,171	2,361	2,004	1,961	-210	0.0	0.0	0.0	0.0	-10.9
Prairies	64,234	64,234	852,832	910,069	927,172	948,339	95,507	13.3	14.2	14.4	14.8	11.2
Southern Arctic	1,142	1,142	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0
Taiga Shield	109,048	109,048	952	1,162	1,458	1,396	444	0.0	0.0	0.0	0.0	42.2
Total	**541,110**	**541,110**	**1,026,241**	**1,091,942**	**1,119,583**	**1,148,401**	**122,160**	**1.9**	**2.0**	**2.1**	**2.1**	**11.9**
Saskatchewan												
Boreal Plains	163,274	163,274	161,945	158,821	160,484	158,021	-3,924	1.0	1.0	1.0	1.0	-2.4
Boreal Shield	147,484	147,484	9,955	12,086	14,680	14,939	4,984	0.1	0.1	0.1	0.1	51.2
Prairies	229,248	229,248	792,946	816,283	801,806	793,332	386	3.5	3.6	3.5	3.5	0.0
Taiga Shield	37,460	37,460	3,467	1,738	1,963	1,865	-1,602	0.1	0.0	0.1	0.1	-46.5
Total	**577,467**	**577,467**	**968,313**	**988,928**	**978,933**	**968,157**	**-156**	**1.7**	**1.7**	**1.7**	**1.7**	**0.0**
Alberta												
Boreal Plains	367,431	367,431	354,030	387,592	438,155	474,416	120,386	1.0	1.1	1.2	1.3	33.9
Boreal Shield	4,159	4,159	0	4	0	5	5	0.0	0.0	0.0	0.0	100.0
Montane Cordillera	46,336	46,336	27,961	31,481	39,813	40,120	12,159	0.6	0.7	0.9	0.9	43.6
Prairies	149,676	149,676	1,853,716	2,123,916	2,493,591	2,772,435	918,719	12.4	14.2	16.7	18.5	49.6
Taiga Plains	60,663	60,663	2,017	2,560	2,938	3,100	1,083	0.0	0.0	0.0	0.1	54.9
Taiga Shield	7,932	7,932	0	0	310	274	274	0.0	0.0	0.0	0.0	100.0
Total	**636,199**	**636,199**	**2,237,724**	**2,545,553**	**2,974,807**	**3,290,350**	**1,052,626**	**3.5**	**4.0**	**4.7**	**5.2**	**47.1**
British Columbia												
Boreal Cordillera	188,728	188,728	3,598	3,351	2,396	2,283	-1,315	0.0	0.0	0.0	0.0	-36.3
Boreal Plains	39,073	39,073	48,582	49,126	53,174	55,972	7,390	1.2	1.3	1.4	1.4	15.2
Montane Cordillera	428,417	428,417	673,053	720,713	819,321	833,378	160,325	1.6	1.7	1.9	1.9	23.8
Pacific Maritime	192,107	192,107	2,014,790	2,503,960	3,027,206	3,215,775	1,200,985	10.5	13.0	15.8	16.7	59.6
Taiga Plains	66,853	66,853	4,444	4,911	5,641	6,079	1,635	0.1	0.1	0.1	0.1	37.8
Total	**915,178**	**915,178**	**2,744,467**	**3,282,061**	**3,907,738**	**4,113,487**	**1,369,020**	**3.0**	**3.6**	**4.3**	**4.5**	**49.9**
Yukon												
Boreal Cordillera	266,546	266,546	22,909	27,488	28,294	29,961	7,052	0.1	0.1	0.1	0.1	30.7
Pacific Maritime	4,093	4,093	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0
Southern Arctic	4,496	4,496	1	0	0	0	-1	0.0	0.0	0.0	0.0	0.0
Taiga Cordillera	180,170	180,170	243	309	370	411	168	0.0	0.0	0.0	0.0	128.1
Taiga Plains	18,110	18,110	0	0	10	0	0	0.0	0.0	0.0	0.0	0.0
Total	**473,415**	**473,415**	**23,153**	**27,797**	**28,674**	**30,372**	**7,219**	**0.0**	**0.1**	**0.1**	**0.1**	**30.9**

See notes at the end of the table.

Table 6.4 – continued

Population by provincial and territorial ecozone

	Area		Population					Density				
	1981 to 1999	1999 to 2006	1981	1991	2001	2006	Change 1981 to 2006	1981	1991	2001	2006	Change 1981 to 2006
	square kilometres		persons					persons per square kilometre				percent
Northwest Territories [1]												
Arctic Cordillera	205,053	…	821	1,047	…	0	-821	0.0	0.0	…	…	…
Boreal Cordillera	4,589	4,589	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0
Boreal Plains	15,218	15,218	4,639	3,008	2,720	2,848	-1,791	0.3	0.2	0.2	0.2	-38.6
Hudson Plains	3,174	…	0	0	…	0	0	0.0	0.0	…	0.0	0.0
Northern Arctic	1,337,719	198,761	10,940	14,867	512	520	-10,420	0.0	0.1	0.0	0.0	-67.3
Southern Arctic	572,936	158,124	5,980	7,057	3,109	3,324	-2,656	0.0	0.0	0.0	0.0	110.2
Taiga Cordillera	84,043	84,043	320	0	0	0	-320	0.0	0.0	0.0	0.0	-100.0
Taiga Plains	423,737	423,737	11,897	13,958	12,137	13,046	1,149	0.0	0.0	0.0	0.0	10.0
Taiga Shield	336,641	257,638	11,144	17,712	18,882	21,726	10,582	0.0	0.1	0.1	0.1	155.5
Total	**2,983,143**	**1,142,110**	**45,741**	**57,649**	**37,360**	**41,464**	**-4,277**	**0.0**	**0.1**	**0.0**	**0.0**	**142.0**
Nunavut [1]												
Arctic Cordillera	…	205,053	…	…	1,304	1,293	…	…	…	0.0	0.0	…
Hudson Plains	…	3,174	…	…	0	0	…	…	…	0.0	0.0	…
Northern Arctic	…	1,138,957	…	…	18,097	20,242	…	…	…	0.0	0.0	…
Southern Arctic	…	414,811	…	…	7,344	7,939	…	…	…	0.0	0.0	…
Taiga Shield	…	79,003	…	…	0	0	…	…	…	0.0	0.0	…
Total	**…**	**1,841,032**	**…**	**…**	**26,745**	**29,474**	**…**	**…**	**…**	**0.0**	**0.0**	**…**

1. As Nunavut was created on April 1, 1999, population data is not available for 1981 and 1991. Population for 1981 and 1991 for Nunavut is included in the Northwest Territories data.

Note(s): The area figures are for land area only and are calculated by taking the total ecozone area and subtracting the surface water area in the ecozone derived from the 1-km water fraction digital dataset. The total area of Canada excluding the Great Lakes is 9,886,215 km^2. Including the Great Lakes the total area of Canada is 9,976,182 km^2.

Source(s): Agriculture and Agri-Food Canada and Environment Canada, 2003, *A National Ecological Framework for Canada*, *http://sis.agr.gc.ca/cansis/nsdb/ecostrat/gis_data.html* (accessed March 2, 2005). Fernandes, R., G. Pavlic, W. Chen and R. Fraser, 2001, *1-km Water Fraction From National Topographic Data Base Maps, Canada*, Natural Resources Canada, *www.geogratis.ca/geogratis/en/option/select.do?id=8C3D34AE-5BD5-A83C-DB8C-895FB4AD86C6* (accessed March 2, 2005). Statistics Canada, Environment Accounts and Statistics Division, Spatial Environmental Information System and Censuses of Population, 1981, 1991, 2001 and 2006.

Section 7

Households and the environment

The data in this section aim to measure the behaviours of Canadian households with respect to the environment. Tables 7.1 and 7.2 outline household use of energy-saving lights and thermostats while Tables 7.3 and 7.4 illustrate the primary type of drinking water consumed and drinking water treatment.

Table 7.1
Use of energy-saving lights, Canada and provinces, 2009

	At least one type of energy-saving light	Compact fluorescent lights	Fluorescent tubes	Halogen lights	LED lights (excluding holiday lights)
	percent				
Canada	**89**	**75**	**47**	**35**	**7**
Newfoundland and Labrador	77	70	26	18	11
Prince Edward Island	92	80	46	16	11 E
Nova Scotia	93	84	48	20	11
New Brunswick	89	76	47	26	10
Quebec	87	69	39	49	5
Ontario	89	79	51	31	7
Manitoba	89	69	55	30	8 E
Saskatchewan	92	78	52	31	8
Alberta	90	77	50	31	8
British Columbia	91	72	50	36	12

Note(s): As a percentage of all households.
Source(s): Statistics Canada, CANSIM table 153-0059.

Table 7.2
Thermostat use by households during the winter, Canada and provinces, 2009

	Households reporting at least one thermostat	Winter temperature lowered when asleep [1]	Main thermostat, programmable [1]	Programmable thermostat		Not programmed or non-programmable
				Programmed thermostat [2]	Winter temperature lowered when asleep [3]	Winter temperature lowered when asleep [4]
	percent					
Canada	**91**	**61**	**49**	**84**	**74**	**53**
Newfoundland and Labrador	92	60	20	74	75	59
Prince Edward Island	97	66	25	86	76	63
Nova Scotia	96	63	25	77	57	64
New Brunswick	95	58	28	72	60	57
Quebec	92	62	46	81	76	54
Ontario	88	59	61	87	70	46
Manitoba	92	58	45	75	81	47
Saskatchewan	96	65	49	83	82	53
Alberta	97	63	47	85	79	52
British Columbia	92	64	38	86	78	58

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

Source(s): Statistics Canada, CANSIM table 153-0060.

Table 7.3
Primary type of drinking water consumed, Canada and provinces, 2009

	Municipal and non-municipal water supply [1]			Municipal water supply [2]			Non-municipal water supply [3]		
	Tap water	Bottled	Both tap water and bottled water	Tap water	Bottled	Both tap water and bottled water	Tap water	Bottled	Both tap water and bottled water
	percent								
Canada	**66**	**24**	**9**	**66**	**24**	**10**	**64**	**28**	**7**
Newfoundland and Labrador	62	28	6 E	60	29	6 E	71	F	F
Prince Edward Island	76	16 E	F	70	20 E	F	85	F	F
Nova Scotia	69	24	6 E	69	23	F	71	24	F
New Brunswick	64	26	8 E	60	31	F	71	19	F
Quebec	61	29	10	61	29	10	62	29	F
Ontario	66	24	10	66	23	10	61	31	7
Manitoba	62	26	12 E	62	25	13 E	51	38	F
Saskatchewan	68	26	5 E	69	25	6 E	49 E	F	F
Alberta	68	24	8	69	23	8	55	39 E	F
British Columbia	73	17	10	73	16	11	72	16 E	F

1. As a percentage of all households.
2. As a percentage of all households that had a municipal water supply.
3. As a percentage of all households that had a non-municipal water supply.

Source(s): Statistics Canada, CANSIM table 153-0063.

Table 7.4
Treatment of drinking water, Canada and provinces, 2009

	Municipal water supply [1]	Households that had a municipal water supply						
		Primary type of drinking water, tap water [2]	Treated water prior to consumption [3]	Used a filter or purifier [3]	Used a filter or purifier on the main supply pipe [3]	Used an on-tap filter or purifier [3]	Used a jug filter [3]	Boiled water in order to make it safe to drink in the last twelve months [3]
	percent							
Canada	**87**	**66**	**51**	**50**	**5**	**17**	**35**	**11**
Newfoundland and Labrador	88	60	64	67	F	21	50	15 E
Prince Edward Island	61	70	56	62	F	F	46	F
Nova Scotia	60	69	52	58	F	13 E	46	F
New Brunswick	48	60	46	50	F	19 E	33	13 E
Quebec	87	61	36	34	2 E	7	27	9
Ontario	89	66	58	57	7	20	39	11
Manitoba	84	62	52	53	F	17 E	43	8 E
Saskatchewan	94	69	46	49	6 E	21	30	6 E
Alberta	91	69	55	54	5	25	34	11 E
British Columbia	90	73	57	49	5	19	33	19

	Non-municipal water supply [1]	Households that had a non-municipal water supply						
		Primary type of drinking water, tap water [4]	Treated water prior to consumption [3]	Used a filter or purifier [3]	Used a filter or purifier on the main supply pipe [3]	Used an on-tap filter or purifier [3]	Used a jug filter [3]	Boiled water in order to make it safe to drink in the last twelve months [3]
	percent							
Canada	**11**	**64**	**49**	**46**	**29**	**14**	**15**	**5**
Newfoundland and Labrador	11 E	71	F	F	F	F	F	F
Prince Edward Island	39	85	37	34	25 E	F	F	F
Nova Scotia	39	71	51	48	32	F	19 E	F
New Brunswick	51	71	52	48	25	17 E	19 E	F
Quebec	11	62	41	37	27	F	F	F
Ontario	9	61	55	51	35	16	16	F
Manitoba	14	51	54	51	F	F	F	F
Saskatchewan	6 E	49 E	F	F	F	F	F	F
Alberta	8 E	55	47	F	F	F	F	F
British Columbia	9	72	52	53	33	F	F	F

1. As a percentage of all households.
2. As a percentage of all households that had a municipal water supply.
3. Information relates only to households that reported primarily consuming tap water, or tap water and bottled water.
4. As a percentage of all households that had a non-municipal water supply.

Source(s): Statistics Canada, CANSIM tables 153-0062, 153-0063 and 153-0066.

Section 8

Economy

Gross domestic product (GDP) measures the total value of goods and services produced in Canada. Table 8.1 illustrates GDP by industry group and Table 8.2 indicates employment by industry group. Table 8.3 outlines the changes in the composition of exports and imports.

Table 8.1
Gross domestic product by industry

	1961	1971	1981	1991	2001	2003	2004	2005	2006	2007
	millions of current dollars									
Total economy	**38,301**	**90,792**	**338,521**	**636,082**	**1,032,172**	**1,128,796**	**1,201,306**	**1,280,550**	**1,354,353**	**1,430,770**
Total economy, goods producing industries	16,375	34,717	132,851	197,849	345,233	368,259	396,722	428,527	444,371	465,088
Total economy, services producing industries	21,926	56,076	205,670	438,233	686,939	760,537	804,584	852,023	909,982	965,682
Crop and animal production	1,743	2,913	10,668	11,981	15,186	15,349	17,101	14,629	13,904	15,802
Forestry and logging	500	841	2,366	3,017	5,226	5,429	6,047	6,055	5,780	5,387
Fishing, hunting and trapping	86	150	579	1,020	1,066	1,170	1,131	1,085	939	978
Support activities for agriculture and forestry	..	..	665	1,430	1,621	1,756	1,758	1,801	1,870	1,963
Mining and oil and gas extraction	1,712	3,652	24,203	23,086	59,442	71,545	85,387	110,695	116,598	121,997
Utilities	881	2,010	9,038	20,779	28,529	31,176	30,896	33,304	33,252	34,971
Construction	2,860	6,686	26,183	39,981	54,210	61,182	67,968	75,914	87,524	99,191
Manufacturing	8,591	18,464	59,149	96,557	179,951	180,653	186,433	185,042	184,505	184,799
Wholesale trade	1,787	4,350	15,176	32,606	53,360	58,874	63,955	68,972	74,588	78,307
Retail trade	2,819	6,156	20,134	37,710	54,471	63,061	66,441	70,278	74,829	81,118
Transportation and warehousing	2,676	5,662	18,794	30,443	48,776	50,991	53,574	58,806	63,181	64,705
Information and cultural industries	1,259	3,023	10,212	20,941	35,998	40,122	43,573	45,672	47,907	50,072
Finance, insurance, real estate and rental and leasing	5,466	13,302	51,779	120,986	195,077	212,143	224,519	234,948	250,771	266,658
Professional, scientific and technical services	544	1,614	8,452	19,819	46,323	51,540	54,445	58,267	63,110	68,914
Administrative and support, waste management and remediation services	175	843	4,216	12,829	22,564	26,608	29,005	31,638	34,090	36,418
Educational services	1,268	5,512	18,632	37,831	48,995	54,065	56,732	59,606	65,046	66,641
Health care and social assistance	1,307	4,601	18,085	45,097	64,706	72,927	76,785	80,281	85,355	92,824
Arts, entertainment and recreation	161	532	2,388	5,077	9,638	10,880	11,625	11,636	12,389	12,910
Accommodation and food services	895	2,190	8,873	15,988	24,192	25,413	26,930	28,256	29,556	31,379
Other services (except public administration)	1,058	2,228	5,880	13,024	25,524	28,726	30,391	32,026	34,029	36,132
Public administration	2,512	6,064	23,049	45,880	57,317	65,187	66,612	71,636	75,133	79,605

Source(s): Statistics Canada, CANSIM tables 379-0023 and 379-0024.

Table 8.2
Employment by industry

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
	percent									
Agriculture, forestry and logging with support activities, fishing, hunting and trapping	4.4	4.3	4.3	4.3	4.1	4.0	3.8	3.8	3.6	3.3
Mining, quarrying, and oil and gas extraction	1.4	1.4	1.3	1.3	1.3	1.3	1.4	1.3	1.1	1.1
Utilities	1.1	1.1	1.1	1.0	0.9	0.9	0.8	0.8	0.8	0.8
Construction	5.7	5.6	5.4	5.5	5.5	5.3	5.3	5.2	5.3	5.5
Manufacturing	14.7	14.3	13.9	14.0	14.3	14.3	14.7	15.0	15.2	15.2
Trade	16.0	16.0	15.8	15.8	15.6	15.6	15.5	15.2	15.4	15.6
Transportation and warehousing	4.9	4.8	4.8	4.9	5.0	5.0	5.1	5.1	5.1	5.2
Finance, insurance, real estate and leasing, business, building and other support services	9.1	9.1	9.2	9.2	9.4	9.6	9.5	9.4	9.5	9.4
Professional, scientific and technical services	4.7	4.6	4.8	4.9	5.1	5.3	5.7	6.0	6.3	6.3
Educational services	6.7	7.0	7.1	7.1	7.0	6.8	6.7	6.6	6.7	6.6
Health care and social assistance	10.2	10.4	10.5	10.4	10.4	10.4	10.1	10.1	10.0	10.3
Information, culture and recreation	3.9	3.9	3.9	4.1	4.3	4.3	4.4	4.4	4.4	4.5
Accommodation and food services	5.9	6.0	6.0	6.1	6.1	6.3	6.3	6.5	6.3	6.4
Other services	4.6	4.7	4.9	5.0	4.9	4.9	4.9	5.0	4.9	4.6
Public administration	6.6	6.8	6.7	6.4	6.2	6.0	5.8	5.6	5.4	5.2
Total, all industries	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
	percent									
Agriculture, forestry and logging with support activities, fishing, hunting and trapping	2.8	2.8	2.8	2.7	2.8	2.7	2.5	2.3	2.3	2.2
Mining, quarrying, and oil and gas extraction	1.2	1.1	1.1	1.2	1.3	1.5	1.5	1.6	1.5	1.5
Utilities	0.8	0.9	0.8	0.8	0.8	0.7	0.8	0.9	0.9	0.9
Construction	5.5	5.6	5.8	6.0	6.3	6.5	6.7	7.2	6.9	7.1
Manufacturing	14.9	15.0	14.5	14.4	13.7	12.8	12.1	11.5	10.6	10.2
Trade	15.8	15.6	15.7	15.7	15.9	15.9	15.9	15.7	15.8	15.7
Transportation and warehousing	5.2	5.0	5.0	5.1	4.9	4.8	4.9	5.0	4.9	4.7
Finance, insurance, real estate and leasing, business, building and other support services	9.4	9.7	9.8	10.0	10.2	10.5	10.4	10.3	10.4	10.4
Professional, scientific and technical services	6.6	6.4	6.4	6.3	6.5	6.6	6.7	7.0	7.1	7.4
Educational services	6.5	6.6	6.6	6.5	6.8	7.0	7.0	6.9	7.1	7.1
Health care and social assistance	10.3	10.5	10.7	10.8	10.7	10.8	10.9	11.1	11.6	11.9
Information, culture and recreation	4.7	4.7	4.6	4.6	4.5	4.5	4.6	4.4	4.6	4.5
Accommodation and food services	6.4	6.5	6.4	6.3	6.2	6.2	6.4	6.3	6.3	6.2
Other services	4.4	4.5	4.6	4.4	4.3	4.3	4.3	4.4	4.7	4.4
Public administration	5.3	5.2	5.3	5.2	5.2	5.1	5.1	5.4	5.5	5.6
Total, all industries	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Note(s): Figures may not add up to totals due to rounding.
Source(s): Statistics Canada, CANSIM table 282-0008.

Table 8.3
Exports and imports

	Agricultural and fishing products		Energy products		Forestry products		Industrial goods and materials		Machinery and equipment	
	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports
	percent									
1975	13.4	8.5	15.5	11.9	14.7	1.3	21.5	18.0	11.7	26.0
1976	11.9	8.6	12.7	10.8	16.6	1.2	21.8	17.2	11.3	24.7
1977	11.4	8.7	11.9	9.9	17.3	1.1	21.8	17.2	10.4	24.1
1978	11.0	8.4	10.8	8.9	17.6	1.1	21.7	18.5	11.3	25.3
1979	10.9	7.6	13.2	9.2	17.5	1.2	22.6	20.5	13.1	26.4
1980	11.6	7.7	13.6	12.1	15.6	0.9	26.1	21.1	13.7	27.7
1981	12.1	7.4	13.4	12.2	14.4	0.9	23.9	20.2	14.3	28.4
1982	12.6	8.0	14.4	9.9	13.2	0.8	20.6	19.3	14.4	27.8
1983	11.9	7.4	13.8	6.8	13.6	1.0	19.5	20.0	13.1	27.5
1984	10.1	6.8	12.4	6.4	12.9	0.9	19.1	19.1	13.4	27.8
1985	8.5	6.0	13.3	6.0	12.5	0.8	18.6	18.7	13.9	26.6
1986	8.7	6.3	8.8	4.4	14.2	0.9	20.6	18.7	16.2	27.2
1987	9.0	6.2	9.8	5.0	16.0	1.0	20.8	18.1	15.8	27.9
1988	8.6	5.7	8.9	3.9	15.0	1.0	22.3	19.3	15.1	30.7
1989	7.9	5.9	9.3	4.5	14.6	1.0	22.0	19.3	16.3	31.1
1990	8.8	6.2	9.2	5.8	13.4	0.9	21.1	18.7	19.0	30.4
1991	8.9	6.4	9.6	4.7	12.6	0.9	21.2	17.6	19.8	30.5
1992	9.4	6.3	9.5	4.2	12.2	0.9	19.8	17.7	19.5	30.2
1993	8.5	6.2	9.3	3.9	12.3	0.9	18.5	18.2	19.4	30.0
1994	8.2	6.1	8.4	3.3	12.8	0.9	18.6	18.9	20.0	31.6
1995	7.9	5.8	7.7	3.1	13.8	0.9	19.2	19.8	21.1	32.9
1996	8.3	5.9	9.3	4.0	12.3	0.8	18.7	19.6	22.1	32.1
1997	8.2	5.6	9.0	3.8	11.6	0.9	18.7	19.6	22.7	32.9
1998	7.7	5.7	7.3	2.8	10.8	0.8	18.1	19.9	24.7	33.3
1999	6.9	5.4	8.1	3.3	10.9	0.8	16.2	19.0	24.0	33.1
2000	6.4	5.1	12.4	4.9	10.0	0.8	15.8	19.1	25.6	33.9
2001	7.4	5.8	13.3	5.1	9.6	0.8	16.1	19.5	24.4	32.0
2002	7.5	6.1	11.9	4.6	9.0	0.9	16.9	19.3	23.4	29.7
2003	7.3	6.3	15.2	5.8	8.6	0.9	16.7	19.0	22.2	28.8
2004	7.2	5.9	15.9	6.8	9.2	0.9	18.2	20.2	21.2	28.7
2005	6.7	5.7	19.3	8.7	8.1	0.8	18.7	20.3	20.7	28.6
2006	6.9	5.8	19.1	8.6	7.4	0.8	20.8	20.8	20.5	28.4
2007	7.5	6.1	19.7	9.0	6.3	0.7	22.6	20.5	20.2	28.0
2008	8.3	6.4	25.7	12.0	5.2	0.6	22.8	20.7	19.0	27.7
2009	10.1	7.8	21.6	9.1	5.3	0.6	21.4	20.1	21.8	28.9
2010	9.1	7.2	22.4	9.8	5.4	0.6	23.8	21.0	18.8	27.5

See notes at the end of the table.

Table 8.3 – continued

Exports and imports

	Automotive products		Other consumer goods [1]		Special transactions trade		Unallocated balance of payments adjustments	
	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports
	percent							
1975	18.6	23.2	1.3	9.6	0.2	0.9	3.0	0.7
1976	20.9	24.7	1.3	10.9	0.4	1.3	3.1	0.6
1977	22.6	26.7	1.3	10.6	0.2	1.0	3.1	0.8
1978	22.6	26.1	1.4	10.5	0.2	0.8	3.5	0.4
1979	17.6	23.8	1.5	9.9	0.3	0.9	3.3	0.6
1980	13.8	19.1	1.6	9.7	0.3	1.1	3.8	0.6
1981	15.6	19.7	1.6	9.6	0.8	1.2	3.9	0.6
1982	19.4	21.4	1.6	10.8	0.3	1.5	3.5	0.5
1983	22.8	24.7	1.6	11.1	0.3	1.3	3.4	0.3
1984	25.4	26.7	1.6	10.7	0.4	1.6	4.7	0.0
1985	26.9	29.0	1.6	9.8	0.3	1.5	4.4	1.6
1986	25.3	28.6	2.0	10.4	0.4	1.5	3.8	2.1
1987	24.2	27.3	2.0	10.6	0.5	1.7	1.8	2.2
1988	24.2	25.0	2.0	10.2	0.5	1.6	3.4	2.7
1989	23.1	22.9	1.8	10.8	0.5	1.5	4.5	2.9
1990	22.8	21.6	2.2	11.2	1.1	2.1	2.4	3.0
1991	22.0	22.0	2.4	11.8	1.1	2.6	2.5	3.6
1992	23.3	21.8	2.7	12.3	1.1	2.6	2.4	4.0
1993	25.6	22.6	2.9	12.1	1.1	2.5	2.4	3.8
1994	25.2	23.0	3.1	11.3	1.1	2.3	2.4	2.6
1995	23.7	21.8	3.1	11.1	1.1	2.4	2.3	2.2
1996	22.6	21.5	3.4	10.9	1.1	3.0	2.2	2.2
1997	22.9	21.9	3.5	10.7	1.3	2.5	2.1	2.0
1998	24.0	22.0	3.8	11.4	1.7	2.1	2.0	1.9
1999	26.4	23.2	3.8	11.3	2.0	1.9	1.7	1.9
2000	22.8	21.4	3.5	11.1	1.9	1.8	1.6	1.8
2001	22.0	20.7	3.9	12.3	1.9	2.0	1.5	1.8
2002	23.3	22.8	4.3	13.0	2.0	1.7	1.6	1.8
2003	21.9	22.3	4.3	13.5	1.9	1.5	1.8	1.8
2004	21.1	21.3	4.0	13.1	1.9	1.4	1.4	1.7
2005	19.5	20.2	3.8	12.8	1.8	1.2	1.4	1.8
2006	18.1	19.7	3.9	12.9	1.9	1.2	1.4	1.9
2007	16.6	19.2	4.0	13.2	1.8	1.3	1.2	1.9
2008	12.5	16.2	3.7	13.0	1.7	1.4	1.1	2.0
2009	11.9	14.8	4.9	15.4	1.7	1.3	1.4	2.1
2010	14.0	16.6	4.1	14.0	1.0	1.2	1.3	2.1

1. Includes apparel and footware, televisions, radios, printed matter, watches, sporting goods and toys, house furnishings, photographic goods, and other miscellaneous end products.

Note(s): Merchandise imports and exports by sector, balance of payments basis-transactions are defined in terms of ownership change.
Source(s): Statistics Canada, CANSIM table 228-0043.

Section 9

Transportation

Transportation fulfils an essential role by bringing goods to market and getting people from place to place. Tables 9.1, 9.2, 9.3, 9.4 and 9.5 outline transportation by water, rail, truck and air transport. While the majority of freight is moved by water and rail, the importance of trucking to freight transport has grown substantially. A contributing factor to increasing truck traffic on roads is the concept of 'just-in-time' delivery of freight, where parts and products are scheduled to arrive as they are needed.

The number of road motor vehicle registrations has increased (Table 9.6). Across the country, driving to work is by far the most popular commuting method (Tables 9.7 and 9.8).

The majority of petroleum products used for transportation are sold through retail pump sales. While most retail pump sales are made to individuals, some commercial vehicles including taxis and fleet vehicles also purchased retail fuel (Table 9.9). Table 9.10 outlines fuel consumption and number of vehicles by passenger bus and urban transit industries.

Table 9.1
Water transport

	Freight loaded		Freight unloaded		Total freight handled	Containerized freight handled		Movement of freight	Passengers transported by ferry
	Domestic	International	Domestic	International		Domestic	International		
	millions of tonnes							millions of tonne-kilometres [1]	millions
1988	70.0	171.1	70.0	78.9	389.9	1.6	12.6	1,711,417	37.8
1989	62.0	159.1	62.0	80.3	363.4	1.4	12.1	1,644,117	38.7
1990	60.4	159.0	60.4	73.3	353.0	1.3	12.3	1,614,007	40.8
1991	57.9	168.0	57.9	66.1	349.9	0.8	12.2	1,708,082	40.4
1992	52.3	153.8	52.3	69.3	327.7	1.0	12.6	1,578,228	40.0
1993	50.4	152.6	50.4	71.6	324.9	0.9	13.3	1,561,072	41.2
1994	52.2	170.0	52.2	76.9	351.3	0.8	14.7	1,697,225	43.2
1995	50.4	176.5	50.4	83.2	360.5	0.8	15.6	1,775,238	42.0
1996	48.8	174.3	48.8	85.6	357.5	0.8	17.1	1,781,143	39.8
1997	46.7	187.9	46.7	94.7	376.1	1.0	18.8	1,967,095	38.2
1998	48.3	179.0	48.3	100.4	376.0	0.9	19.7	1,876,328	37.3
1999	52.2	179.6	52.2	101.6	385.6	0.9	22.5	1,881,141	39.2
2000	54.5	187.8	54.5	105.9	402.8	0.9	24.0	1,959,031	38.5
2001	53.9	174.7	53.9	112.1	394.7	0.9	23.5	1,861,192	39.0
2002	62.8	174.3	62.6	108.5	408.1	1.0	26.3	1,755,388	39.4
2003	68.5	191.4	68.6	115.3	443.8	1.0	28.9	1,965,979	38.9
2004	69.1	196.0	69.1	119.0	453.3	1.1	32.0	2,045,068	38.9
2005	70.2	201.8	70.1	129.2	471.3	1.0	32.7	2,206,469	38.7
2006	68.1	206.3	68.2	124.0	466.6	1.0	33.9	2,257,891	38.4
2007	67.7	214.2	67.7	119.7	469.3	1.0	37.1	2,219,259	39.7
2008	69.0	203.5	69.1	122.5	464.0	1.0	37.8	1,949,126	41.9
2009 p	53.7	197.3	53.7	104.4	409.1	1.0	34.8	1,825,024	39.6

1. The movement of one tonne over a distance of one kilometre.

Source(s): Statistics Canada, Transportation Division, *Shipping in Canada*, Catalogue no. 54-205-X, various issues. Transport Canada, Surface and Marine Statistics and Forecasts, 2011, special tabulation.

Table 9.2
Rail transport

	Freight movement		Passenger movement		Locomotives	Passenger cars	Freight cars	Total diesel	Total track operated
	Revenue and non-revenue freight, tonnes	Revenue and non-revenue freight, tonne-kilometres [1]	Revenue passengers, passengers	Revenue passengers, passenger-kilometres [2]					
	millions				number			millions of litres	kilometres
1988	302.9	274,451	6.9	2,417	3,379	815	119,359	2,220	90,372
1989	286.2	252,120	7.0	2,556	3,297	804	113,439	2,024	88,165
1990	272.5	250,201	3.9	1,330	3,189	565	107,631	1,914	86,010
1991	278.8	262,437	4.0	1,363	3,112	515	105,295	1,973	85,324
1992	268.4	252,454	3.9	1,327	3,094	502	101,840	1,894	84,951
1993	263.5	257,805	3.8	1,340	2,922	436	101,745	1,907	84,408
1994	301.9	289,530	3.9	1,363	2,975	422	101,532	1,987	83,506
1995	305.3	282,449	3.9	1,415	2,980	380	96,602	1,998	80,267
1996	303.6	283,396	3.9	1,469	2,942	354	97,603	1,994	77,390
1997	327.4	307,167	4.1	1,496	2,771	328	95,681	2,204	76,063
1998	337.0	299,764	4.0	1,448	2,616	330	93,236	2,077	74,530
1999	344.0	301,977	3.9	1,510	2,608	329	89,971	1,950	74,052
2000	363.5	325,206	4.2	1,549	2,508	333	88,018	1,977	74,412
2001	356.9	325,040	4.2	1,553	2,535	323	87,019	1,982	73,821
2002	345.7	321,318	4.3	1,597	2,480	372	82,632	1,970	73,186
2003	353.0	321,804	4.0	1,434	2,512	461	82,346	2,008	71,920
2004	374.1	343,858	4.0	1,421	2,552	480	84,276	2,097	72,048
2005	382.6	356,202	4.3	1,478	2,683	512	93,947	2,130	72,367
2006	369.7	356,832	4.2	1,450	2,689	520	91,428	2,119	71,812
2007	367.5	362,534	4.3	1,453	2,655	528	83,175	2,194	71,716
2008	339.7	343,513	4.8	1,574	2,576	527	75,667	2,078	70,230
2009	285.3	302,115	4.4	1,413	2,560	544	67,741	1,770	68,092

1. The movement of one tonne over a distance of one kilometre.
2. The movement of a passenger over a distance of one kilometre. Passenger-kilometres are derived by multiplying the number of passengers by the distance travelled.

Note(s): Common carrier railways operating in Canada that provide for-hire passenger and freight services are included. Excluded from the survey are companies that provide rail support services (bridge and terminal service etc.) and sightseeing tours.

Source(s): Statistics Canada, CANSIM tables 404-0010, 404-0012, 404-0016 and 404-0017.

Table 9.3
Long distance truck transport, for-hire carriers

	Freight carried		Number of shipments	Weight per shipment	Distance per shipment
	Tonnes	Tonne-kilometres [1]			
	millions			kilograms	kilometres
1989	189.6	77,383	34.9	5,431	621
1990	174.2	77,069	30.0	5,816	647
1991	150.6	70,048	29.1	5,178	648
1992	149.5	72,276	27.6	5,410	656
1993	173.4	83,968	27.9	6,208	659
1994	195.6	101,873	30.5	6,418	641
1995	210.9	109,434	32.3	6,523	685
1996	229.0	120,459	35.2	6,509	709
1997	223.3	130,141	32.0	6,962	792
1998	233.9	137,552	33.8	6,914	776
1999	269.3	158,104	36.4	7,396	771
2000	278.4	164,720	35.6	7,830	798
2001	288.0	170,915	37.0	7,775	803
2002	293.6	177,210	38.6	7,607	782
2003	305.2	184,957	40.4	7,559	797
2004	298.6	188,151	39.7	7,523	822
2005	305.8	192,224	40.2	7,616	795
2006	291.9	185,001	39.2	7,447	834
2007	276.4	182,537	39.9	6,933	868
2008	281.0	184,417	38.9	7,225	801
2009	251.2	172,611	33.4	7,522	848

1. The movement of one tonne over a distance of one kilometre.

Note(s): These figures pertain only to the long distance shipments of Canada-based long distance for-hire trucking carriers. It should be noted that for-hire trucking does not include goods shipped by 'private trucking'—trucking fleets owned or leased by companies outside of the trucking industry who look after their own shipping—or by small local carriers, such as farm trucks, company delivery trucks, and other private trucks of all sizes.

Source(s): Statistics Canada, Transportation Division, *Trucking in Canada*, Catalogue no. 53-222-X, various issues. Statistics Canada, Transportation Division, 2011, special tabulation.

Table 9.4
Truck transport, for-hire carriers

	Freight carried		Number of shipments		
	Tonnes	Tonne-kilometres [1]	Shipments	Weight per shipment	Distance per shipment
	millions			kilograms	kilometres
2004	557.8	224,909.8	59.6	9,354	608
2005	587.4	233,583.2	61.6	9,534	599
2006	598.4	225,104.9	61.7	9,695	618
2007	603.8	224,839.4	63.8	9,468	604
2008	588.5	223,801.6	60.5	9,732	584
2009	542.7	212,688.9	54.1	10,037	588

1. The movement of one tonne over a distance of one kilometre.

Note(s): These figures pertain to all of the shipments of Canada-based for-hire trucking carriers. It should be noted that for-hire trucking does not include goods shipped by 'private trucking'—trucking fleets owned or leased by companies outside of the trucking industry who look after their own shipping—or by small local carriers, such as farm trucks, company delivery trucks, and other private trucks of all sizes.

Source(s): Statistics Canada, CANSIM table 403-0004.

Table 9.5
Air transport

	Freight carried		Passengers	Passenger-kilometres [2]
	Weight	Tonne-kilometres [1]		
	tonnes	millions		
1988	591,250	1,516	34.8	62,141
1989	603,828	1,552	35.7	65,628
1990	628,180	1,727	36.3	66,608
1991	603,267	1,565	31.3	57,953
1992	596,812	1,493	31.9	62,117
1993	624,561	1,636	31.1	60,985
1994	653,444	1,791	32.5	65,636
1995	692,579	2,034	36.0	73,506
1996	721,260	2,168	39.6	82,270
1997	789,146	2,353	43.6	92,104
1998	822,185	2,280	45.2	96,643
1999	832,987	2,364	46.4	99,623
2000	845,809	2,327	46.8	104,917
2001	789,625	2,149	45.4	102,473
2002	786,607	2,151	40.5	95,094
2003	662,612	1,855	41.5	90,326
2004	694,458	2,013	45.6	101,965
2005	779,930	2,236	48.1	109,975
2006	790,238	2,227	51.8	118,729
2007	893,325	1,997	55.0	126,334
2008	..	1,809	57.7	129,600
2009	..	1,626	55.0	122,958

1. The movement of one tonne over a distance of one kilometre.
2. The movement of a passenger over a distance of one kilometre. Passenger-kilometres are derived by multiplying the number of passengers by distance travelled.

Note(s): Figures include all Canadian carriers that earned more than $1 million in revenue during each of the previous two years.
Source(s): Statistics Canada, Transportation Division, *Aviation*, Catalogue no. 51-004-X, various issues.

Table 9.6
Motor vehicle registrations

	Road motor vehicles						Trailers	Off-road, construction, farm vehicles
	Vehicles weighing less than 4,500 kilograms	Vehicles weighing 4,500 kilograms to 14,999 kilograms	Vehicles weighing 15,000 kilograms or more	Buses	Motorcyles and mopeds	Total, road motor vehicle registrations		
	thousands							
2000	16,832	391	270	77	311	17,882	3,989	1,756
2001	17,055	387	267	74	318	18,102	4,023	1,302
2002	17,544	367	277	79	350	18,617	4,161	1,419
2003	17,769	379	282	80	373	18,884	4,316	1,488
2004	17,990	394	286	78	409	19,156	4,514	1,527
2005	18,275	416	302	79	444	19,515	4,723	1,600
2006	18,739	443	318	80	485	20,065	4,961	1,658
2007	19,199	461	328	83	522	20,593	5,231	1,753
2008	19,613	490	333	84	567	21,087	5,528	1,851
2009	19,877	504	326	86	595	21,387	5,747	1,921

Note(s): In 1999, Statistics Canada implemented a revised methodology for motor vehicle registration data in Canada. These data are not comparable with motor vehicle registrations prior to 1999.
Source(s): Statistics Canada, CANSIM table 405-0004.

Table 9.7
Usual mode of transportation for travel to work

	2001	2006	Change 2001 to 2006	2001	2006
	number of workers			percent	
Total	**13,450,855**	**14,714,260**	**1,263,405**	**100.0**	**100.0**
Car, truck, van, as driver	9,929,470	10,644,325	714,855	73.8	72.3
Car, truck, van, as passenger	923,975	1,133,150	209,175	6.9	7.7
Used public transit	1,406,585	1,622,725	216,140	10.5	11.0
Walked	881,085	939,290	58,205	6.6	6.4
Bicycled	162,910	195,515	32,605	1.2	1.3
Other [1]	146,835	179,250	32,415	1.1	1.2

1. Corresponds to the remaining modes of transportation, such as motorcycle, taxi or 'other modes,' such as inline skating, snowmobile, etc.

Source(s): Statistics Canada, 2009, *Place of Work Highlight Tables, 2006 Census*, *www12.statcan.ca/english/census06/data/highlights/POW/Index.cfm* (accessed January 26, 2011). Statistics Canada, 2003, *Where Canadians work and how they get there?, 2001 Census: analysis series*, *www12.statcan.ca/english/census01/Products/Analytic/companion/pow/pdf/96F0030XIE2001010.pdf* (accessed January 26, 2011).

Table 9.8
Usual mode of transportation for travel to work, by census metropolitan areas (CMA), 2006

	All modes	Car, truck, van		Used public transit	Walked	Bicycled	Other [1]
		As driver	As passenger				
	number of workers	percent					
All CMAs	**10,387,425**	**69.4**	**7.4**	**15.1**	**5.7**	**1.4**	**1.0**
St. John's	83,580	74.4	13.8	2.9	6.6	0.3	2.1
Halifax	186,425	65.1	10.6	11.9	10.1	1.0	1.3
Moncton	62,965	74.7	12.4	2.8	7.6	1.0	1.5
Saint John	56,145	75.1	11.2	4.4	7.3	0.3	1.7
Saguenay	66,120	85.1	5.3	2.4	5.3	0.8	1.1
Québec	361,575	74.9	5.4	10.2	7.3	1.4	0.7
Sherbrooke	85,565	80.3	5.8	4.8	7.4	0.9	0.8
Trois-Rivières	62,065	84.8	4.5	2.4	6.1	1.4	0.8
Montréal	1,716,490	65.4	5.0	21.4	5.7	1.6	0.8
Ottawa-Gatineau	559,595	62.7	8.0	19.4	6.8	2.1	0.9
Kingston	69,530	73.1	9.3	4.1	9.6	2.4	1.5
Peterborough	52,110	76.4	10.0	2.5	7.8	2.3	1.1
Oshawa	160,015	79.0	8.6	7.9	3.4	0.4	0.7
Toronto	2,433,060	63.6	7.5	22.2	4.8	1.0	0.9
Hamilton	324,650	76.1	8.5	8.7	5.0	0.9	0.8
St. Catharines-Niagara	178,695	81.0	8.8	2.5	5.0	1.5	1.1
Kitchener	228,700	78.3	9.4	4.8	5.1	1.6	0.8
Brantford	59,030	80.2	9.5	3.1	4.8	1.1	1.2
Guelph	64,825	76.0	8.5	6.0	6.1	2.3	1.0
London	219,485	75.5	9.1	6.7	6.1	1.6	0.9
Windsor	139,055	83.1	7.6	2.9	4.3	1.3	0.9
Barrie	86,830	81.2	9.4	3.8	3.9	0.6	1.0
Greater Sudbury/Grand Sudbury	71,860	77.4	9.5	5.2	6.2	0.7	1.1
Thunder Bay	56,525	79.8	8.6	3.2	5.9	1.6	0.9
Winnipeg	346,795	69.8	8.9	13.0	5.8	1.6	0.9
Regina	100,700	79.6	8.1	4.2	5.8	1.4	0.9
Saskatoon	117,620	78.7	7.5	3.7	6.2	2.4	1.6
Calgary	584,505	69.1	7.5	15.6	5.4	1.3	1.0
Edmonton	546,070	75.0	7.8	9.7	5.1	1.1	1.2
Kelowna	73,030	81.4	7.7	2.7	4.6	2.1	1.5
Abbotsford	72,280	83.2	10.0	1.8	3.2	0.7	1.2
Vancouver	1,003,020	67.3	7.1	16.5	6.3	1.7	1.1
Victoria	158,510	64.9	6.8	10.2	10.4	5.6	2.0

1. Corresponds to the remaining modes of transportation, such as motorcycle, taxi or 'other modes,' such as inline skating, snowmobile, etc.

Source(s): Statistics Canada, 2009, *Place of Work Highlight Tables, 2006 Census*, Catalogue no. 97-561-XWE2006002, *www12.statcan.ca/english/census06/data/highlights/POW/Index.cfm?* (accessed January 26, 2011).

Table 9.9
Consumption of refined petroleum products by transportation industry

	Railways	Total airlines [1]	Total marine [1]	Road transport and urban transit	Retail pump sales	Pipelines [2]	Total
	thousands of cubic metres						
1995	2,092	4,244	2,523	6,450	34,251	36	49,596
1996	2,046	4,941	2,480	6,690	34,849	57	51,062
1997	2,074	5,082	2,481	7,147	35,778	13	52,574
1998	1,999	5,227	2,919	7,197	36,817	24	54,182
1999	2,116	5,583	2,741	7,345	37,902	24	55,711
2000	2,169	5,634	2,801	7,175	38,100	21	55,901
2001	2,132	5,015	3,016	6,721	38,448	12	55,344
2002	1,934	5,299	2,718	6,871	38,665	9	55,496
2003	1,927	5,336	2,524	7,368	39,728	20	56,905
2004	1,959	5,822	2,803	7,573	41,192	25	59,376
2005	2,060	6,017	2,728	8,028	40,809	20	59,662
2006	2,124	5,970	2,451	7,973	40,935	11	59,464
2007	2,258	5,776	2,673	8,404	43,249	18	62,376
2008	2,372	5,714	2,464	8,325	43,223	19	62,116
2009	2,294	5,449	2,148	8,176	43,881	23	61,971

1. Includes fuels purchased in Canada by domestic and foreign companies.
2. The volume used to operate and run the pumps at the pumping stations.

Note(s): Refined petroleum products refers to motor gasoline, diesel fuel oil, light fuel oil, heavy fuel oil, aviation gasoline and aviation turbo fuel. Figures may not add up to totals due to rounding.

Source(s): Statistics Canada, CANSIM tables 128-0003 and 128-0010.

Table 9.10
Fuel consumption and number of vehicles by passenger bus and urban transit industries, 2008[P]

	Fuel consumed			Electricity	Number of vehicles
	Diesel	Gasoline	Other fuel		
	thousands of litres			thousands of kilowatts	number
Total	**937,563**	**13,451**	**56,940**	**830,237**	**63,879**
Urban transit	509,934	934	50,554	830,237	18,377
Interurban and rural bus	71,956	x	0	0	3,361
School and employee bus	262,378	7,091	F	0	36,745
Charter bus and sightseeing	81,707	x	x	0	3,323
Other transit - shuttle	11,588	4,674	3,197	0	2,074

Note(s): Figures may not add up to totals due to rounding.

Source(s): Statistics Canada, Transportation Division, 2010, *Service Bulletin - Surface and Marine Transport*, Catalogue no. 50-002-X, Vol. 25, no. 7.

Section 10

Environmental protection expenditures

Governments in Canada impose various environmental regulations regarding the prevention or reduction of air emissions, effluents, solid waste, as well as the protection of wildlife and habitat. Industry spending on environmental protection may also be affected by environmental conventions and voluntary agreements between governments and industry representatives. Environmental protection expenditures by Canadian businesses are illustrated in Tables 10.1 and 10.2.

Pollution prevention attempts to eliminate waste and pollution before it is created in manufacturing processes. It involves continuous improvement through changes in product design, technology, operations and behaviour. The purpose of pollution abatement and control is to abate or control undesirable substances emitted during normal production activities, without any impact on the production process itself. Tables 10.3 and 10.4 illustrate the distribution of capital expenditures on pollution prevention and pollution abatement and control.

Table 10.1
Operating expenditures on environmental protection by type of activity and industry

	Environmental monitoring	Environmental assessments and audits	Reclamation and decommissioning	Wildlife and habitat protection	Waste management and sewerage services	Pollution abatement and control processes (end-of-pipe)	Pollution prevention processes	Fees, fines and licences	Other	Total
	millions of dollars									
2008										
Total, all industries	**284.6**	**112.3**	**638.7**	**52.0**	**1,624.6**	**1,261.1**	**950.3**	**97.2**	**220.6**	**5,241.4**
Logging	0.8	0.6	0.3	16.1	3.8	F	F	x	1.3	30.3
Oil and gas extraction	90.2	32.3	403.0	10.2	134.9	245.2	253.2	12.9	53.9	1,235.9
Mining and quarrying	34.5	13.6	61.6	0.9	60.1	127.0	57.1	16.0	31.1	401.9
Electric power generation, transmission and distribution	49.9	25.2	101.9	12.6	156.2	118.3	112.8	28.4	41.2	646.7
Natural gas distribution	0.4	0.5	F	x	3.0	x	x	0.1	1.1	20.8
Food manufacturing	6.9	2.7	F	F	298.9	22.7	11.9	9.7	4.3	357.3
Beverage and tobacco product manufacturing	0.3	0.2	x	0.1	15.7	1.0	x	0.7	0.3	19.0
Wood product manufacturing	4.9	2.1	3.4	8.1	36.2	F	7.8	2.8	2.1	93.0
Paper manufacturing	26.0	4.0	5.0	0.5	156.6	155.3	76.1	8.9	7.7	440.1
Petroleum and coal product manufacturing	8.5	1.0	10.6	0.1	92.2	138.7	73.6	5.3	8.4	338.5
Chemical manufacturing	15.5	7.4	29.9	x	102.7	72.9	34.8	x	18.6	286.6
Non-metallic mineral product manufacturing	5.1	2.8	1.8	0.1	30.2	28.5	7.9	2.1	4.5	83.0
Primary metal manufacturing	27.7	7.1	14.7	1.5	211.8	270.5	F	3.0	19.1	796.7
Fabricated metal product manufacturing	3.2	1.9	F	x	100.6	9.4	12.5	0.6	4.2	132.7
Transportation equipment manufacturing	4.4	3.7	0.7	F	70.7	15.9	9.7	0.4	12.9	118.7
Other manufacturing industries	6.3	7.0	3.7	F	151.0	26.9	33.4	1.9	10.0	240.2
Pipeline transportation	..	..	..	..	..	..	..	..	..	..
2006										
Total, all industries	**245.8**	**131.3**	**543.7**	**109.4**	**1,736.9**	**1,048.6**	**668.4**	**121.3**	**245.8**	**4,851.2**
Logging	2.6	2.5	6.5	32.2	9.3	0.8	5.4	0.8	2.4	62.6
Oil and gas extraction	50.2	43.2	344.4	16.5	197.3	183.7	117.2	25.2	101.5	1,079.2
Mining and quarrying	20.8	8.3	49.8	2.1	54.5	71.3	48.9	11.1	10.2	277.0
Electric power generation, transmission and distribution	39.6	28.8	68.6	17.2	90.0	52.3	85.8	28.7	55.8	466.9
Natural gas distribution	0.8	3.4	1.2	0.1	4.1	x	6.7	x	2.2	22.4
Food manufacturing	10.8	4.7	F	x	239.5	24.4	19.6	9.2	8.2	317.9
Beverage and tobacco product manufacturing	0.2	x	F	x	10.5	F	0.6	3.0	0.2	15.5
Wood product manufacturing	4.1	2.4	12.4	F	F	18.8	9.4	2.8	3.4	181.8
Paper manufacturing	31.1	x	7.8	x	219.0	165.5	56.2	12.3	9.0	508.5
Petroleum and coal product manufacturing	7.6	2.0	6.1	x	48.1	123.7	103.1	x	4.7	297.1
Chemical manufacturing	18.8	5.5	10.1	x	123.7	59.8	32.2	F	13.0	280.5
Non-metallic mineral product manufacturing	6.2	1.5	2.8	0.1	33.9	16.6	6.4	2.7	2.7	73.0
Primary metal manufacturing	34.5	8.6	16.8	1.4	168.6	290.0	76.3	4.5	10.3	610.9
Fabricated metal product manufacturing	2.4	2.9	2.1	F	45.7	5.0	8.0	0.7	1.6	68.5
Transportation equipment manufacturing	3.6	4.0	x	x	94.9	18.8	6.8	x	10.2	142.1
Other manufacturing industries	9.6	5.5	F	F	294.1	13.1	F	2.5	3.8	379.0
Pipeline transportation	2.6	2.7	6.6	2.0	6.6	1.3	39.4	0.4	6.7	68.3

Note(s): Figures may not add up to totals due to rounding.
Source(s): Statistics Canada, CANSIM table 153-0052.

Table 10.2
Capital expenditures on environmental protection by type of activity and industry

	Environmental monitoring	Environmental assessments and audits	Reclamation and decommissioning	Wildlife and habitat protection	Waste management and sewerage services	Pollution abatement and control processes (end-of-pipe)	Pollution prevention processes	Total
	millions of dollars							
2008								
Total, all industries	**44.5**	**108.0**	**496.6**	**88.8**	**397.7**	**1,682.2**	**959.1**	**3,828.6**
Logging	0.0	0.0	0.0	0.0	x	F	F	F
Oil and gas extraction	26.2	38.1	419.6	43.7	170.8	790.0	118.1	1,640.4
Mining and quarrying	7.5	20.2	20.7	1.5	48.2	119.1	134.2	351.7
Electric power generation, transmission and distribution	2.6	39.9	21.5	41.6	52.9	197.6	276.3	641.2
Natural gas distribution	x	x	1.9	x	x	x	x	52.6
Food manufacturing	F	F	F	F	27.5	19.2	42.3	92.4
Beverage and tobacco product manufacturing	0.1	x	x	0.0	x	x	x	13.7
Wood product manufacturing	x	F	0.0	0.6	F	3.4	6.8	18.1
Paper manufacturing	1.0	x	5.4	0.1	9.7	13.0	30.5	60.0
Petroleum and coal product manufacturing	0.7	F	x	x	14.2	122.9	42.5	206.2
Chemical manufacturing	2.0	x	3.2	0.0	34.5	27.8	47.4	115.7
Non-metallic mineral product manufacturing	0.7	1.4	x	x	F	39.2	38.2	92.6
Primary metal manufacturing	1.2	F	3.6	0.0	6.9	290.5	72.6	375.2
Fabricated metal product manufacturing	0.0	0.3	x	0.0	3.9	F	14.3	29.7
Transportation equipment manufacturing	x	F	0.1	0.0	1.9	26.3	14.6	43.0
Other manufacturing industries	0.7	F	F	0.0	5.4	19.5	F	85.2
Pipeline transportation	..	..	..	..	..	..	..	..
2006								
Total, all industries	**174.2**	**142.3**	**429.1**	**156.8**	**523.6**	**916.5**	**1,566.9**	**3,909.5**
Logging	F	F	F	F	0.5	0.8	F	F
Oil and gas extraction	132.3	43.1	343.7	124.8	286.3	410.1	377.1	1,717.4
Mining and quarrying	5.3	x	9.3	x	26.0	174.5	49.2	269.9
Electric power generation, transmission and distribution	6.4	85.1	21.6	18.5	22.2	73.3	111.6	338.7
Natural gas distribution	x	2.9	x	x	x	3.0	54.1	65.7
Food manufacturing	1.4	0.4	F	x	F	12.8	41.0	123.8
Beverage and tobacco product manufacturing	x	0.0	F	0.0	x	x	3.1	5.4
Wood product manufacturing	F	F	F	F	1.8	30.7	18.3	55.5
Paper manufacturing	1.8	0.1	3.2	0.2	9.5	21.3	52.0	88.0
Petroleum and coal product manufacturing	x	F	x	0.0	10.4	45.7	533.1	596.4
Chemical manufacturing	0.6	x	3.0	x	8.8	25.8	44.0	82.4
Non-metallic mineral product manufacturing	F	F	F	3.3	0.5	16.1	22.7	61.1
Primary metal manufacturing	0.8	x	12.8	x	8.1	68.9	31.1	122.6
Fabricated metal product manufacturing	F	x	x	0.0	10.1	3.0	F	F
Transportation equipment manufacturing	0.1	x	x	x	x	15.7	18.7	42.2
Other manufacturing industries	0.8	F	0.4	x	F	12.8	73.0	150.2
Pipeline transportation	1.6	5.6	21.9	4.8	x	x	39.2	75.3

Note(s): Figures may not add up to totals due to rounding.
Source(s): Statistics Canada, CANSIM table 153-0052.

Table 10.3
Distribution of capital expenditures on pollution prevention by medium and industry, 2008

	Air	Surface water	On-site contained solid and liquid waste	Noise, radiation and vibration	Other	Total
	millions of dollars					
Total, all industries	**422.2**	**178.8**	**232.8**	**F**	**100.6**	**959.1**
Logging	F	F	F	F	F	F
Oil and gas extraction	F	F	19.4	F	0.9	118.1
Mining and quarrying	18.9	83.6	30.7	x	x	134.2
Electric power generation, transmission and distribution	81.3	21.3	142.3	F	F	276.3
Natural gas distribution	x	0.1	1.1	0.0	0.0	x
Food manufacturing	10.8	8.3	F	F	16.2	42.3
Beverage and tobacco product manufacturing	1.4	1.4	0.0	F	1.5	x
Wood product manufacturing	3.1	0.6	1.6	0.0	1.6	6.8
Paper manufacturing	20.9	x	2.9	x	3.9	30.5
Petroleum and coal product manufacturing	26.8	x	4.6	x	x	42.5
Chemical manufacturing	23.9	4.0	8.3	F	F	47.4
Non-metallic mineral product manufacturing	30.9	2.7	x	F	4.2	38.2
Primary metal manufacturing	60.5	5.7	5.4	x	x	72.6
Fabricated metal product manufacturing	7.5	1.7	2.0	0.2	2.9	14.3
Transportation equipment manufacturing	x	F	x	0.0	4.6	14.6
Other manufacturing industries	F	F	F	0.2	12.0	F
Pipeline transportation	..	..	..	..	..	..

Note(s): Figures may not add up to totals due to rounding.
Source(s): Statistics Canada, CANSIM table 153-0054.

Table 10.4
Distribution of capital expenditures on pollution abatement and control (end-of-pipe) by medium and industry, 2008

	Air	Surface water	On-site contained solid and liquid waste	Noise, radiation and vibration	Total
	millions of dollars				
Total, all industries	**1,361.0**	**114.7**	**190.2**	**16.2**	**1,682.2**
Logging	F	F	0.0	F	F
Oil and gas extraction	711.4	18.3	58.5	1.7	790.0
Mining and quarrying	F	x	67.5	F	119.1
Electric power generation, transmission and distribution	149.7	20.9	x	F	197.6
Natural gas distribution	x	0.0	0.0	0.0	x
Food manufacturing	9.9	3.6	F	F	19.2
Beverage and tobacco product manufacturing	0.7	x	x	x	x
Wood product manufacturing	3.0	F	0.2	0.0	3.4
Paper manufacturing	8.0	4.4	x	x	13.0
Petroleum and coal product manufacturing	96.9	x	x	F	122.9
Chemical manufacturing	11.7	4.6	10.1	1.4	27.8
Non-metallic mineral product manufacturing	37.9	0.5	F	0.7	39.2
Primary metal manufacturing	272.9	8.3	x	F	290.5
Fabricated metal product manufacturing	F	0.1	0.1	F	F
Transportation equipment manufacturing	15.3	x	x	x	26.3
Other manufacturing industries	16.8	F	F	x	19.5
Pipeline transportation	..	..	..	..	..

Note(s): Figures may not add up to totals due to rounding.
Source(s): Statistics Canada, CANSIM table 153-0054.

Section 11

Waste management

Many factors affect waste production. As the population increases, total waste production also increases. Economic growth can also lead to more waste. Recycling is one way of reducing the amount of waste going to landfills. Tables 11.1 and 11.2 present disposal and diversion of waste, while Table 11.3 presents material prepared for recycling.

Table 11.1
Disposal and diversion of waste, by province and territory

	Waste disposed per capita [1]			Diverted materials per capita [2]			Diversion rate		
	2004	2006	2008	2004	2006	2008	2004	2006	2008
	kilograms per capita						percent		
Canada	**789.8**	**795.9**	**776.5**	**222.7**	**237.2**	**254.3**	**22.0**	**23.0**	**24.7**
Newfoundland and Labrador	773.1	840.3	811.1	68.2	x	x	8.1	x	x
Prince Edward Island	x	x	x	x	x	x	x	x	x
Nova Scotia	425.8	382.8	378.2	255.3	294.2	309.5	37.5	43.5	45.0
New Brunswick	590.1	686.2	641.9	185.8	338.2	358.1	24.0	33.0	35.8
Quebec [3]	856.4	827.8	794.5	282.7	319.0	317.8	24.8	27.8	28.6
Ontario	791.7	766.7	744.8	194.9	189.2	217.4	19.8	19.8	22.6
Manitoba	790.9	763.7	801.5	134.2	129.0	141.3	14.5	14.5	15.0
Saskatchewan	797.0	840.4	890.7	114.5	107.7	147.6	12.6	11.4	14.2
Alberta	949.9	1,116.5	1,122.0	191.4	190.8	202.9	16.8	14.6	15.3
British Columbia	666.1	687.4	641.3	291.0	321.9	343.3	30.4	31.9	34.9
Yukon, Northwest Territories and Nunavut	x	x	x	x	x	x	x	x	x

1. Total amount of non-hazardous waste disposal in public and private waste disposal facilities includes waste that is exported out of the source province or out of the country for disposal. This does not include waste disposal in hazardous waste disposal facilities or waste managed by the waste generator on site.
2. This information covers only those companies and local waste management organizations that reported non-hazardous recyclable material preparation activities and refers only to that material entering the waste stream and does not cover any waste that may be managed on-site by a company or household. Additionally, these data do not include those materials transported by the generator directly to secondary processors, such as, pulp and paper mills while bypassing entirely any firm or local government involved in waste management activities.
3. Waste diversion data are derived from a survey administered by RECYC-QUÉBEC.

Note(s): Figures may not add up to totals due to rounding. Per capita estimates of waste disposed and diverted materials reflect updates to population estimates.
Source(s): Statistics Canada, CANSIM tables 051-0001, 153-0041 and 153-0043.

Table 11.2
Disposal of waste, by source and by province and territory

	Residential sources [1]			Non-residential sources [2]			All sources		
	2004	2006	2008	2004	2006	2008	2004	2006	2008
	tonnes								
Canada	**8,961,583**	**8,893,494**	**8,536,891**	**16,265,183**	**17,032,470**	**17,334,419**	**25,226,766**	**25,925,964**	**25,871,310**
Newfoundland and Labrador	228,004	227,618	216,992	172,044	201,192	193,598	400,048	428,809	410,590
Prince Edward Island	x	x	x	x	x	x	x	x	x
Nova Scotia	179,262	169,337	148,060	220,705	189,768	206,171	399,967	359,105	354,231
New Brunswick	208,120	263,580	233,703	234,053	248,125	245,758	442,173	511,706	479,461
Quebec [3]	2,209,000	2,125,704	2,052,182	4,245,000	4,191,690	4,105,970	6,454,000	6,317,393	6,158,152
Ontario	3,489,917	3,411,642	3,231,399	6,319,347	6,298,818	6,400,160	9,809,264	9,710,459	9,631,559
Manitoba	450,658	425,304	400,297	477,459	478,968	565,902	928,117	904,272	966,199
Saskatchewan	279,420	296,062	289,760	515,513	537,691	613,182	794,933	833,753	902,943
Alberta	943,420	973,683	958,539	2,133,890	2,846,189	3,070,895	3,077,311	3,819,872	4,029,435
British Columbia	919,323	956,968	960,472	1,848,335	1,960,113	1,851,097	2,767,657	2,917,080	2,811,568
Yukon, Northwest Territories and Nunavut	x	x	x	x	x	x	x	x	x

1. Residential non-hazardous waste disposal includes solid waste produced by all residences and includes waste that is picked up by the municipality (either using its own staff or through contracting firms), and waste from residential sources that is self-hauled to depots, transfer stations and disposal facilities.
2. Non-residential non-hazardous solid waste are those wastes generated by all sources excluding the residential waste stream. These include: industrial materials, which are generated by manufacturing, and primary and secondary industries, and is managed off-site from the manufacturing operation; commercial materials, which are generated by commercial operations, such as, shopping centres, restaurants, offices, and others; and institutional materials which are generated by institutional facilities, such as, schools, hospitals, government facilities, seniors homes, universities, and others. These wastes also include construction, renovation and demolition non-hazardous waste, also referred to as DLC (demolition, land clearing and construction waste). These refer to wastes generated by construction, renovation and demolition activities. It generally includes materials, such as, wood, drywall, certain metals, cardboard, doors, windows, wiring, and others. It excludes materials from land clearing on areas not previously developed as well as materials that include asphalt, concrete, bricks and clean sand or gravel.
3. The waste disposal data prior to 2006 were derived from a survey administered by RECYC-QUÉBEC.

Note(s): Total amount of non-hazardous waste disposal in public and private waste disposal facilities includes waste that is exported out of the source province or out of the country for disposal. This does not include waste disposal in hazardous waste disposal facilities or waste managed by the waste generator on site.
Source(s): Statistics Canada, CANSIM table 153-0041.

Table 11.3
Materials prepared for recycling by type and by province and territory, 2008

	Canada	Newfound-land and Labrador	Prince Edward Island	Nova Scotia	New Brunswick	Quebec [1]	Ontario	Manitoba	Saskat-chewan	Alberta	British Columbia	Yukon, Northwest Territories and Nunavut
	tonnes											
All materials	**8,473,257**	**x**	**x**	**289,950**	**267,467**	**2,463,600**	**2,810,900**	**170,377**	**149,619**	**728,536**	**1,505,112**	**x**
Newsprint	1,132,398	x	x	34,771	12,287	310,000	494,116	45,638	18,796	84,239	124,979	x
Cardboard and boxboard	1,400,907	x	x	27,271	15,111	456,000	419,690	38,249	39,332	115,789	260,478	x
Mixed paper	931,358	x	0	7,399	x	376,000	210,720	10,263	8,158	86,941	x	x
Glass	421,007	x	x	1,222	x	103,000	143,780	7,361	x	x	x	x
Ferrous metals	350,370	0	0	4,244	1,499	134,400	110,467	x	x	20,685	34,193	x
Copper and aluminum	58,950	x	x	581	x	19,200	17,363	4,146	x	6,814	x	x
Mixed metals	127,033	x	x	1,462	3,540	0	22,364	4,052	1,143	20,266	73,471	x
White goods	312,988	0	0	x	x	270,000	12,376	x	2,743	x	12,192	x
Electronics	24,367	0	0	x	x	7,000	4,419	99	x	5,429	x	0
Plastics	325,868	x	x	6,303	1,518	113,000	98,594	9,247	4,863	26,342	64,864	x
Tires	158,336	0	x	x	298	73,000	8,087	1,499	x	3,392	x	667
Construction, renovation and demolition	720,076	0	0	40,368	x	211,000	209,628	2,331	x	54,056	198,480	0
Organics	2,439,223	0	x	158,419	225,081	384,000	1,029,510	x	12,190	231,544	343,586	x
Other materials	70,375	x	x	2,400	954	7,000	29,786	703	1,009	10,111	9,101	x

1. Waste diversion data are derived from a survey administered by RECYC-QUÉBEC.

Note(s): This information covers only those companies and local waste management organizations that reported non-hazardous recyclable material preparation activities and refers only to that material entering the waste stream and does not cover any waste that may be managed on-site by a company or household. Additionally, these data do not include those materials transported by the generator directly to secondary processors, such as, pulp and paper mills while bypassing entirely any firm or local government involved in waste management activities.

Source(s): Statistics Canada, CANSIM table 153-0043.

Section 12

Research and development

The analysis of investment in research and development is one way to monitor the commitment to develop science and technology. Expenditures on research and development in the higher education sector are shown in Table 12.1. Federal spending on research and development aimed at control and care of the environment can be found in Table 12.2.

Table 12.1

Estimates of research and development expenditures in the higher education sector, 2008/2009

	Total expenditures	Share of total	Source of funds					
			Federal government	Provincial governments	Business enterprise	Higher education	Private non-profit organizations	Foreign
	millions of dollars	percent						
Total	**10,931.9**	**100.0**	**25.7**	**10.1**	**8.2**	**46.3**	**8.7**	**1.0**
Social sciences and humanities [1]	2,215.5	20.3	21.2	10.0	1.6	59.3	7.9	0.0
Health sciences [2]	4,379.4	40.1	24.5	7.6	8.8	44.5	13.7	1.0
Other natural sciences and engineering [3]	4,337.0	39.7	29.3	12.7	10.9	41.4	4.1	1.6

1. Social sciences and humanities embrace all disciplines involving the study of human actions and conditions and the social, economic and institutional mechanisms affecting humans. Included are such disciplines as anthropology, business administration and commerce, communications, criminology, demography, economics, geography, history, languages, literature and linguistics, law, library science, philosophy, political sciences, psychology, religious studies, social work, sociology, and urban and regional studies.
2. Health sciences consist of programmes directed towards the protection and improvement of human health.
3. Other natural sciences and engineering consist of disciplines, other than health sciences, concerned with understanding, exploring, developing or utilizing the natural world. Included are the engineering, mathematical and physical sciences.

Source(s): Statistics Canada, Business Special Surveys and Technology Statistics Division, 2010, *Science Statistics*, Catalogue no. 88-001-X, Vol. 34, no. 5.

Table 12.2
Federal government research and development expenditures by socio-economic objective

	Intramural [1]									
	1998/1999	1999/2000	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005	2005/2006	2006/2007	2007/2008
	millions of dollars									
Total	**1,627**	**1,734**	**1,957**	**2,000**	**2,075**	**1,976**	**1,983**	**2,298**	**2,391**	**2,421**
Exploration and exploitation of the Earth	179	186	207	125	141	85	98	110	98	102
Infrastructure and general planning of land use										
Transport	38	42	37	71	65	56	53	58	50	52
Telecommunications	32	24	28	44	37	35	43	52	51	44
Other	50	42	48	30	39	38	38	46	40	44
Control and care of the environment	98	122	143	142	174	178	181	216	188	203
Protection and improvement of human health	87	103	116	152	186	196	203	210	217	258
Production, distribution and rational utilization of energy	170	171	187	248	214	245	199	229	339	387
Agricultural production and technology										
Agriculture	308	334	333	345	287	275	269	336	340	337
Fishing	42	43	51	47	55	42	44	47	47	45
Forestry	74	77	83	75	74	72	71	75	76	61
Industrial production and technology	123	137	165	164	189	189	174	198	196	203
Social structures and relationships	125	50	53	47	61	60	62	59	81	100
Exploration and exploitation of space	92	68	187	175	179	121	125	162	163	123
Non-oriented research	54	150	150	181	202	206	208	219	219	239
Other civil research	13	14	16	15	14	14	15	23	24	18
Defence	136	167	150	134	152	157	191	245	261	205
Other	4	4	3	5	6	6	10	13	...	...

	Extramural [2]									
	1998/1999	1999/2000	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005	2005/2006	2006/2007	2007/2008
	millions of dollars									
Total	**1,835**	**2,030**	**2,070**	**2,887**	**2,737**	**3,379**	**3,371**	**3,628**	**3,577**	**4,071**
Exploration and exploitation of the Earth	29	99	46	69	59	75	55	78	58	72
Infrastructure and general planning of land use										
Transport	28	23	20	24	25	19	27	28	26	33
Telecommunications	35	34	15	23	24	27	30	31	21	28
Other	15	16	20	25	28	31	28	28	29	33
Control and care of the environment	83	88	112	148	141	171	155	185	175	198
Protection and improvement of human health	318	390	519	709	866	960	988	1,106	1,160	1,364
Production, distribution and rational utilization of energy	65	68	64	117	75	210	181	103	89	107
Agricultural production and technology										
Agriculture	44	67	70	75	90	86	79	102	130	128
Fishing	10	13	14	15	16	23	26	25	19	21
Forestry	24	43	27	27	41	56	49	44	46	65
Industrial production and technology	406	398	518	741	657	778	732	884	831	875
Social structures and relationships	90	87	106	130	149	170	189	203	196	228
Exploration and exploitation of space	270	269	154	193	179	197	190	164	179	208
Non-oriented research	229	256	188	365	213	376	428	496	535	609
Other civil research	2	1	17	17	2	1	2	4	10	10
Defence	120	121	119	142	100	116	94	93	72	91
Other	68	57	62	67	72	82	119	54	...	...

1. The research and development intramural expenditures are managed and carried out primarily by federal government employees. Non-program (indirect costs) are excluded.
2. The management and conduct of the research and development extramural expenditures are entrusted to a non-federal organization.

Source(s): Statistics Canada, Science, Business Special and Technologie Statistics Division, *Science Statistics*, Catalogue no. 88-001-X, various issues.

Section 13

Legislation

The aim of the *Canadian Environmental Protection Act* (CEPA) is to prevent pollution and protect the environment and human health. It also provides enforcement officers with the authority to address cases of alleged non-compliance with the Act. Enforcement activities include inspection to verify compliance, investigation of alleged violations, measures to compel compliance without resorting to formal court action, and measures to compel compliance through court action. CEPA enforcement activities are presented in Table 13.1.

Table 13.1
Canadian Environmental Protection Act enforcement activities

	1993/1994	1994/1995	1995/1996	1996/1997	1997/1998	1998/1999	1999/2000	2000/2001
	number							
On-site inspections [1]	1,571	1,335	963	708	1,523	1,555	779	1,446
Off-site inspections [1, 2]	..	..	..	..	..	1,058	2,526	1,801
Investigations [3]	55	64	45	33	56	78	64	20
Warnings [4]	133	127	85	30	204	421	473	450
Directives [5]	1	1	0	2	0	8	9	22
Prosecutions [6]	3	9	13	5	8	2	26	11
Convictions	11	12	6	7	3	1	1	7

	2001/2002	2002/2003	2003/2004	2004/2005	2005/2006	2006/2007	2007/2008	2008/2009
	number							
On-site inspections [1]	1,628	1,934	2,334	2,547	2,232	2,698	2,552	1,940
Off-site inspections [1, 2]	3,009	2,870	2,079	2,727	2,978	2,434	2,674	2,665
Investigations [3]	57	36	32	43	35	64	43	35
Warnings [4]	517	347	672	1,162	2,216	1,785	1,560	1,106
Directives [5]	5	3	8	2	8	96	4	0
Prosecutions [6]	27	4	8	13	11	6	5	7
Convictions	7	3	14	1	2	3	1	8

1. Inspections verify compliance with the *Canadian Environmental Protection Act* (CEPA). They may be on-site (at the site of a facility, plant, structure, border crossing, airport or other port of entry, on a ship, aircraft, or other means of transport) or off-site. Off-site inspections were previously called administrative verifications.
2. The tracking of off-site inspections or administrative verifications only started in 1998/1999. However, on-site inspection numbers prior to this time may have included some administrative verifications.
3. Investigations involve gathering, from a variety of sources, evidence and information relevant to a suspected violation.
4. Written warnings indicate the existence of a minor violation, in order that the alleged offender can take notice and return to compliance.
5. Written directions oblige the regulatee responsible for the potential violation to take all reasonable measures to remedy any dangerous conditions and/or to reduce any danger to the environment.
6. A legal proceeding for the purpose of determining the guilt or innocence of an accused (that is, person and/or organization) under CEPA.

Note(s): Data is based on the federal government fiscal year which is from April 1 to March 31.

Source(s): Environment Canada, Enforcement Branch, 2010, *Enforcement – Reports and Statistics*, *www.ec.gc.ca/alef-ewe/default.asp?lang=En&n=5C63F879-1* (accessed December 9, 2010).