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# Annual Demographic Estimates: Subprovincial Areas, July 1, 2023

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## Notice to readers

Estimates released in this publication are based on 2021 Census counts adjusted for census net undercoverage and incompletely enumerated reserves and settlements to which are added the population change for the period from May 11, 2021 to the date of the estimate.

These estimates are based on the 2021 Standard Geographical Classification.

This analysis is based on preliminary data. Since these data will be revised in the coming year, some trends described in this analysis may change because of these revisions. Therefore, this analysis should be interpreted with caution.

Most of the components, used to produce preliminary population estimates, are estimated using demographic models or based on data sources less complete or reliable, albeit timelier, than those used for updated or final estimates.

## **Acknowledgements**

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The Demographic Estimates Program of Statistics Canada is grateful for the ongoing support and partnership with Immigration, Refugees and Citizenship Canada greatly contributes to the accuracy of the estimation of non-permanent residents.

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Demographic estimates for Canada's subprovincial areas are available in Tables [17-10-0148-01](#) to [17-10-0155-01](#), which are listed and linked in the section [Related products](#).

## Highlights

Canada's census metropolitan areas continued to see significant population growth in the 12 months leading to July 1, 2023, following the post-pandemic rebound they experienced a year prior. Gains in the number of non-permanent residents and new immigrants accounted for most of the annual growth.

### Census metropolitan areas

- Almost three quarters (74.4%) of all Canadians now lived in one of Canada's census metropolitan areas (CMAs) on July 1, 2023. This proportion is up 0.4 percentage point in a single year as CMAs experienced significant annual growth (+3.5%).
- The CMAs of Kitchener-Cambridge-Waterloo (Ont.), Moncton (N.B.) and Calgary (Alb.) grew at the fastest rates from July 1, 2022, to July 1, 2023 (2022/2023) with +6.0%, +6.0% and +5.9%, respectively.
- The CMAs of Thunder Bay (Ont.) (+1.4%) and Hamilton (Ont.) (+1.6%) grew at the slowest rate among CMAs over the last year. While slower than other CMAs this year, such growth rates would have placed them in the middle of the pack a decade ago.
- Out of 41 CMAs, 33 saw their population grow at a faster rate in 2022/2023 than it did a year prior, with 31 seeing their fastest growth rate since at least 2001/2002—period for which comparable population figures are available.
- More than half of the CMAs (22 out of 41) are estimated to have seen growth rate at or above 3.0% in the last year, with three growing by more than 5.0%.
- Net international migration was the leading source of population growth in all but four CMAs in 2022/2023.
- For a second year in a row, all CMAs in Ontario, Manitoba, and Saskatchewan saw net losses from people moving to other provinces in 2022/2023. Meanwhile, all CMAs in Alberta, except for Red Deer, recorded their highest net gains from other provinces since at least 2001/2002.
- Migration trends within each provinces remained similar with the largest CMAs, namely Toronto (Ont.) (-93,024), Montréal (Que.) (-20,624), and Vancouver (B.C.) (-18,399), continuing to see significant net losses to exchanges with the rest of their respective provinces, mostly a consequence of urban spread.

### Census agglomerations

- In 2022/2023, 102 of the 111 census agglomerations (CAs) saw positive demographic growth, an increase from the proportion observed a year prior (91 out of 111 in 2021/2022).
- In 2022/2023, the CA of Cape Breton, located in Northern Nova Scotia, experienced the highest growth (+6.4%), while Squamish (B.C.) (+5.5%) and Charlottetown (P.E.I.) (+4.7%) came in second and third place. While international migration was the leading cause of growth for Cape Breton and Charlottetown, gains from other parts of British Columbia explain most of the growth in Squamish.
- The CA of Cobourg (Ont.) recorded the highest rate of decline in 2022/2023 at -0.5%, mainly due to the number of deaths being higher than births in the region. The CA of Fort St. John (B.C.) (-0.4%) came in second place with migration to other parts of British Columbia and to other provinces driving its decline.

### Census divisions

- The census division (CD) of Cape Breton (N.S.), whose boundaries coincide with that of the CA of the same name, recorded the highest rate of population growth in 2022/2023 at +6.4%. It was followed by the CD

of Westmorland (N.B.) (+5.9%) and Waterloo (Ont.) (+5.7%). International migration was the main driver of growth among those fastest growing CD, with migration from other provinces and parts of their respective provinces also playing a role.

- The CDs showing the most pronounced population decline in 2022/2023 were that of Region 5 (N.W.T.) (-2.4%) and Division No. 11 (N.L.) (-2.0%). The decline is mostly driven by losses to internal migration within their respective province or territory, or with other provinces.

### **Census subdivisions**

- Among census subdivisions (CSDs) with a population of at least 5,000 (as of July 1, 2023), West St. Paul (Man.) (+10.1%), Banff (Alb.) (+10.0%), Whistler (B.C.) (+8.8%) and Chestermere (Alb.) (+7.8%) grew at the fastest pace in 2022/2023. In general, the fastest-growing CSDs are often found in the periphery of CMAs.
- Six of the 25 fastest growing CSDs with a population of at least 5,000 are in the Atlantic provinces, up from four a year prior.
- CSDs with the highest rates of population decrease continue to be found mostly in remote regions and smaller urban regions. Among CSDs with a population of at least 5,000, Meadow Lake (Sask.) (-1.7%) saw its population decrease at the fastest rate in 2022/2023.

## Quality of demographic data

The estimates contain certain inaccuracies stemming from two types of errors:

- errors in the Census data;
- imperfections in other data sources and the method used to estimate the components.

### Census Data

#### Coverage, response, and imputation errors

The errors attributable to census data can be divided into two groups: Response and processing errors, and coverage errors. The first group implies non-response error, misinterpretation by respondents, incorrect coding, and non-response imputation. Errors in the second group primarily result from census undercoverage and, to a lesser extent, overcoverage. It should be noted that both types of errors are intrinsic to any survey data.

Coverage errors occur when individuals are missed, enumerated more than once, or enumerated while not being part of the census universe (this last aspect is not estimated because it is deemed negligible). Following each census, Statistics Canada undertakes coverage studies to measure these errors. The main studies are the *Reverse Record Check Survey (RRC)* and the *Census Overcoverage Study (COS)*. Based on these studies, estimates of undercoverage and overcoverage are produced for each province and territory. The Centre for Demography adjusts the population enumerated in the census by province and territory using these estimates. At the subprovincial level these rates are applied to all geographic regions in the province or territory by age and gender.

**Table 1**  
**Estimated census net undercoverage, Canada, provinces and territories, 2001 to 2021 censuses**

	Census population	Census net undercoverage	Incompletely enumerated reserves and settlements	Adjusted population	Rate
	A	B	C	D=A+B+C	(B+C)/D*100
	number				percent
<b>2021</b>					
<b>Canada</b>	<b>36,991,981</b>	<b>1,142,239</b>	<b>58,480</b>	<b>38,192,700</b>	<b>3.14</b>
Newfoundland and Labrador	510,550	16,234	0	526,784	3.08
Prince Edward Island	154,331	6,901	0	161,232	4.28
Nova Scotia	969,383	27,852	0	997,235	2.79
New Brunswick	775,610	13,624	0	789,234	1.73
Quebec	8,501,833	42,868	18,759	8,563,460	0.72
Ontario	14,223,942	585,370	18,693	14,828,005	4.07
Manitoba	1,342,153	39,283	9,063	1,390,499	3.48
Saskatchewan	1,132,505	34,912	11	1,167,428	2.99
Alberta	4,262,635	153,165	11,108	4,426,908	3.71
British Columbia	5,000,879	212,846	846	5,214,571	4.10
Yukon	40,232	2,467	0	42,699	5.78
Northwest Territories	41,070	3,589	0	44,659	8.04
Nunavut	36,858	3,128	0	39,986	7.82
<b>2016</b>					
<b>Canada</b>	<b>35,151,728</b>	<b>849,727</b>	<b>27,790</b>	<b>36,029,245</b>	<b>2.44</b>
Newfoundland and Labrador	519,716	9,774	0	529,490	1.85
Prince Edward Island	142,907	3,464	0	146,371	2.37
Nova Scotia	923,598	17,809	0	941,407	1.89
New Brunswick	747,101	15,735	0	762,836	2.06
Quebec	8,164,361	35,191	11,985	8,211,537	0.57
Ontario	13,448,494	381,542	11,640	13,841,676	2.84
Manitoba	1,278,365	31,895	0	1,310,260	2.43
Saskatchewan	1,098,352	34,844	0	1,133,196	3.07
Alberta	4,067,175	115,968	4,043	4,187,186	2.87
British Columbia	4,648,055	197,267	122	4,845,444	4.07
Yukon	35,874	2,370	0	38,244	6.20
Northwest Territories	41,786	2,939	0	44,725	6.57
Nunavut	35,944	929	0	36,873	2.52



**Table 1**  
**Estimated census net undercoverage, Canada, provinces and territories, 2001 to 2021 censuses**

	Census population	Census net undercoverage	Incompletely enumerated reserves and settlements	Adjusted population	Rate
	A	B	C	D=A+B+C	(B+C)/D*100
	number				percent
<b>2011</b>					
<b>Canada</b>	<b>33,476,688</b>	<b>759,125</b>	<b>37,392</b>	<b>34,273,205</b>	<b>2.32</b>
Newfoundland and Labrador	514,536	10,192	0	524,728	1.94
Prince Edward Island	140,204	3,386	0	143,590	2.36
Nova Scotia	921,727	21,911	0	943,638	2.32
New Brunswick	751,171	3,930	0	755,101	0.52
Quebec	7,903,001	73,240	16,882	7,993,123	1.13
Ontario	12,851,821	369,874	14,926	13,236,621	2.91
Manitoba	1,208,268	21,698	608	1,230,574	1.81
Saskatchewan	1,033,381	29,580	768	1,063,729	2.85
Alberta	3,645,257	128,584	4,094	3,777,935	3.51
British Columbia	4,400,057	91,280	114	4,491,451	2.03
Yukon	33,897	1,356	0	35,253	3.85
Northwest Territories	41,462	1,977	0	43,439	4.55
Nunavut	31,906	2,117	0	34,023	6.22
<b>2006</b>					
<b>Canada</b>	<b>31,612,897</b>	<b>868,658</b>	<b>40,115</b>	<b>32,521,670</b>	<b>2.79</b>
Newfoundland and Labrador	505,469	5,046	0	510,515	0.99
Prince Edward Island	135,851	1,903	0	137,754	1.38
Nova Scotia	913,462	24,558	0	938,020	2.62
New Brunswick	729,997	16,059	0	746,056	2.15
Quebec	7,546,131	60,751	16,600	7,623,482	1.01
Ontario	12,160,282	465,824	15,391	12,641,497	3.81
Manitoba	1,148,401	34,330	0	1,182,731	2.90
Saskatchewan	968,157	22,594	739	991,490	2.35
Alberta	3,290,350	111,353	7,272	3,408,975	3.48
British Columbia	4,113,487	121,551	113	4,235,151	2.87
Yukon	30,372	1,805	0	32,177	5.61
Northwest Territories	41,464	1,620	0	43,084	3.76
Nunavut	29,474	1,264	0	30,738	4.11
<b>2001</b>					
<b>Canada</b>	<b>30,007,094</b>	<b>924,430</b>	<b>34,539</b>	<b>30,966,063</b>	<b>3.10</b>
Newfoundland and Labrador	512,930	9,401	0	522,331	1.80
Prince Edward Island	135,294	1,325	0	136,619	0.97
Nova Scotia	908,007	24,521	0	932,528	2.63
New Brunswick	729,498	20,095	0	749,593	2.68
Quebec	7,237,479	140,232	12,648	7,390,359	2.07
Ontario	11,410,046	436,349	15,960	11,862,355	3.81
Manitoba	1,119,583	30,903	110	1,150,596	2.70
Saskatchewan	978,933	21,231	581	1,000,745	2.18
Alberta	2,974,807	69,857	4,977	3,049,641	2.45
British Columbia	3,907,738	164,542	263	4,072,543	4.05
Yukon	28,674	1,423	0	30,097	4.73
Northwest Territories	37,360	3,295	0	40,655	8.10
Nunavut	26,745	1,256	0	28,001	4.49

**Note:** The levels and rates are based on the Reverse Record Check (RRC), the Census Undercoverage Study (CUS) and the Census Overcoverage Study (CUS). They include non-permanent residents.

**Source:** Statistics Canada, Centre for Demography.

When creating base populations, the Demographic Estimates Program (DEP) corrects the census populations only for coverage errors. This correction, which is based on the findings of coverage studies, is primarily subject to sampling errors, and to a lesser extent, processing errors. Statistical tests indicate that coverage adjustments improve the quality of census data. The DEP uses the estimates from coverage studies for the provinces and territories. However, given the size of the samples in these studies, estimates by age and gender are modeled. Furthermore, it is assumed that the coverage rates estimated for a province or territory apply to the regions within that geographic area. With respect to the coverage studies, statistical analysis concluded that the adjustment,

although not without errors itself, improved the quality of census data (Royce, 1993). They were deemed to be consistent over time and across geographical areas, and to provide logical results. Users should also be aware that when calculating census net undercoverage (CNU) rates for small areas, it is likely that the underlying assumptions may be violated. If this is true, the resulting CNU rate would be misleading. Errors associated with these assumptions are, however, very difficult to quantify.

The corrections to the census data due to CNU improved, in general, the quality of the estimates by compensating for the differential undercoverage by age, gender and by province/territory across censuses.

The adjustment also incorporates the results of a study on the estimates of the number of people living on incompletely enumerated reserves and settlements to complete the corrections for coverage errors in the census. The results of the coverage studies contain mainly sampling errors.

These adjustments have a direct impact on:

- The error of closure and its distribution by age and gender within a province or a territory as well as by province or territory as the CNU and its distribution vary from one census to another;
- within-cohort consistency of population estimates. If for example, the male+ cohort in age group 0 to 4 in 1981 was tracked up to the 2001 Census (unadjusted for CNU) the age group 20 to 24 would be noticeably smaller in 2001 than the age group 15 to 19 in 1996. Since Canada receives many immigrants within these age groups, the opposite would be expected. However, only after adjustment for CNU, the cohort size increases from 1996 to 2001.

For further information regarding the main coverage studies, please see the following document on Statistics Canada's web site: [1996](#), [2001](#), [2006](#), [2011](#), and [2016](#) Census Technical Report on Coverage. The technical report on coverage for the 2021 Census will be available on October 23, 2024.

## Components

Errors due to estimation methodologies and data sources other than the census can also be significant.

### A. Births and deaths

Since the law requires the recording of vital statistics, the final estimates for births and deaths data meet very high-quality standards. Nevertheless, since preliminary estimates are derived, they can be slightly different from final estimates.

### B. Immigration and non-permanent residents

Immigration, Refugees and Citizenship Canada (IRCC) administers data files that allow the measurement of the numbers of immigrants, asylum claimants as well as work, study and temporary resident permit holders in Canada. As immigration is controlled by law, data on immigrants and NPRs are collected upon and after arrival in Canada. These data include only regular immigrants and are considered to be of very high quality.

Differences may exist for the province or territory of destination: the one envisaged by the immigrant at the time of arrival may differ from the one where they will actually reside. NPR estimates are more error-prone than immigrant data, notably because the province or territory of residence of certain groups of permit holders is missing, the number of family members living with permit holders needs to be modeled, and finally, data sources on NPR exiting Canada are limited.

### C. Emigration, returning emigration

Of all the demographic components that are used in the DEP, emigration and returning emigration are the most difficult to estimate with precision. Canada does not have a complete border registration system. While immigration and non-permanent residents (NPRs) are well documented by the federal government, Statistics Canada has always used indirect techniques for the estimation of the number of persons leaving the country. For this reason, available statistics regarding these two components have historically been of a lower quality than other components.

Estimates of the number of long-term emigrants and long-term returning emigrants are both derived using *Canada Child Benefit (CCB)* data provided by *Canada Revenue Agency (CRA)*. Data are adjusted to consider the incomplete coverage of the program and to derive the emigration and returning emigration of adults.

These adjustments and the delay in obtaining the data are the two main sources of errors. As current information on the number of short-term emigrants and short-term returning emigrants does not exist, estimates are based on the *Census Undercoverage Study (CUS)* and the census. For short-term emigrants, estimates for the intercensal period are based on the CUS and are distributed according to long-term emigration data. For short-term returning emigrants, mobility data from the last census is subtracted from estimates of the number of long-term returning emigrants over the entire last intercensal period. Assumptions were made to distribute the data by province and territory, and annual data by quarter and by subprovincial and subterritorial region. Assumptions must also be made to establish the variation for the postcensal period. Any geographical or quarterly variation may introduce error in the estimation of these components.

#### **D. Interprovincial migration and intraprovincial migration**

Preliminary interprovincial and intraprovincial migration estimates are based on data from the *Canada Revenue Agency (CRA)*. *Canada child benefit (CCB)* data is used for children while T1FF data from the prior year is used for adults as that data is not yet available for the most recent year when preliminary estimates are produced.

Final estimates are obtained by comparing addresses indicated on personal income tax returns over two consecutive tax years, by making use of the latest T1FF files (with the exception of Quebec's subprovincial areas<sup>1</sup>). An adjustment is also required to consider migrants who do not file income tax returns.

#### **E. Level of detail of components**

As a more detailed breakdown of the data introduces a greater risk of inaccuracy into the estimates, the possibility of error in the components is augmented by the method used to distribute the estimates by age and gender. It seems that, in general, the initial errors should be minimal where the distribution of annual estimates of births, deaths and immigrants is concerned, and more significant regarding the distribution of other components (non-permanent residents, emigrants, returning emigrants, and interprovincial and intraprovincial migrants). Finally, the size of error due to the age and gender distribution may vary by period and errors in some components may have a greater impact on a given age group or gender.

### **Geographical changes**

Subprovincial geographical boundaries may change from one census to another. To facilitate chronological studies, population estimates for CDs, CMAs and ERs were produced for the 2001 to 2023 period according to the Standard Geographical Classification (SGC) 2021.

To clarify the demographic significance of geographical boundary changes, the 2016 population Census counts are converted in SGC 2021. Afterward, we compare the converted counts with the population counts of the 2016 Census in SGC 2016. Data presented here apply to population enumerated in the 2016 Census without adjustment for census net undercoverage.

#### **Census metropolitan areas (CMAs)**

With the adoption of the SGC 2021, six census agglomerations under SGC 2016 became census metropolitan areas: Fredericton (N.B.), Drummondville (Que.), Red Deer (Alb.), Kamloops (B.C.), Chilliwack (B.C.), and Nanaimo (B.C.). Among the 35 CMAs defined by the SGC 2016, 11 have undergone boundary changes under SGC 2021.

1. See sub-section K of the section on Methodology.

### Census Agglomerations (CAs)

With the transition from SGC 2016 to the SGC 2021, five new CAs have been created: Saint-Agathe-des-Monts (Que.), Amos (Que.), Essa (Ont.), Trail (B.C.), and Ladysmith (B.C.). The CAs of Bay Roberts (Nfld.) and Cold Lake (Alb.) were removed because their population dropped below 10,000 in 2021. As well, the CAs of Arnprior (Ont.) and Carleton Place (Ont.) were absorbed into the CMA of Ottawa-Gatineau (Ont.), while the Leamington (Ont.) AR became part of the CMA of Windsor (Ont.)

### Economic Regions (ERs)

There were no changes in Economic Region boundaries between SGC 2016 and SGC 2021.

### Census divisions (CDs)

There were no changes to Census divisions boundaries between SGC 2016 and SGC 2021.

### Quality assessment

To assess the quality of our estimates, two evaluation measures are used: precocity errors and errors of closure.

#### A. Precocity errors

The quality of preliminary estimates of components is evaluated using precocity errors. Precocity error is defined as the difference between preliminary and final estimate of a particular component in terms of its relative proportion of the total population for the relevant geographical area. It can be calculated for both population and component estimates. The precocity error measures the impact of the trade-off of accuracy in favour of timeliness on the estimated population. The precocity error is calculated as:

$$PE_{(t-1,t)} = \frac{(N_{(t-1,t)}^{preliminary} - N_{(t-1,t)}^{final})}{P_{(t-1)}^{postcensal}} \times 1,000$$

where:

$PE_{(t-1,t)}$  = the precocity error for the period from t-1 to t;

$N_{(t-1,t)}^{preliminary}$  = the preliminary estimate of a component of demographic change;

$N_{(t-1,t)}^{final}$  = the final estimate of a component of demographic change;

$P_{(t-1)}^{postcensal}$  = postcensal estimates of population for the relevant geographical area at time t-1.

The precocity error of a component gives us information on the size of the error between the preliminary and the final population estimate. Analysis of precocity errors allows for useful comparisons between components, as well as between geographical areas of different population size. Precocity error can either be positive or negative. A positive precocity error denotes that the preliminary estimate is larger than the final estimate while a negative precocity error indicates the opposite. Note that when compared to the total population for an area, the differences between preliminary and final estimates of the components are quite small. However, this type of error has a different impact on each component and geographical area.

Generally, for subprovincial estimates, net interprovincial and intraprovincial migration yields the greatest precocity errors. This is likely the result of the use of different data sources for preliminary and final estimates. In most years and for most provinces and territories, births, deaths, and immigration estimates yielded the smallest precocity errors. For immigration estimates, this reflects the completeness of the data source and the availability of data for the timelier preliminary estimates. In the case of births and deaths, small precocity errors can be explained using short-term projections for preliminary estimates.

According to the analysis of the most recent precocity errors and if the quality of the basic data remains constant, the present postcensal estimates should have an acceptable degree of reliability.

## B. Errors of closure

The error of closure measures the exactness of the final postcensal estimates. It is defined as the difference between the final postcensal population estimates on Census Day and the enumerated population of the most recent census adjusted for census net undercoverage (CNU). A positive error of closure means that the postcensal population estimates have overestimated the population.

The error of closure comes from two sources: errors primarily due to sampling when measuring census coverage and errors related to the components of population growth over the intercensal period. For each five-year intercensal period, the error of closure can only be calculated following the release of census data and estimates of CNU. The error of closure can be calculated for the total population of each province and territory as well as by age and gender.

By dividing the error of closure by the census population adjusted for CNU the differences are relatively small at the national level (0.16% for 2001, 0.12% for 2006, 0.46% for 2011, 0.33% for 2016, and -0.11% for 2021). At the provincial and territorial level, as at the subprovincial level, differences are understandably larger, since the estimates are also affected by errors in estimating interprovincial and intraprovincial migration. Nevertheless, the provincial and territorial final postcensal estimates generally fall within 1% of the adjusted census population, except for the territories and a few other exceptions.

For census metropolitan areas (CMAs) and census agglomerations (CAs), population estimates overestimated the total population (0.1%), while population was underestimated by -0.1% for Economic Regions.

Population estimates overestimated the population of 128 of the 293 census divisions (CDs). For 123 of the CDs, the absolute difference between population estimates and adjusted census counts was less than 1%. The error of closure of 256 CDs, that is 87% of all CDs, was comprised between -3% and 3%.

**Table 2**  
**Error of closure of the estimates of population, Canada, provinces and territories, 2001 to 2021**

	2001		2006		2011		2016		2021	
	number	rate in percent	number	rate in percent	number	rate in percent	number	rate in percent	number	rate in percent
<b>Canada</b>	<b>50,054</b>	<b>0.16</b>	<b>39,409</b>	<b>0.12</b>	<b>158,558</b>	<b>0.46</b>	<b>120,044</b>	<b>0.33</b>	<b>-41,269</b>	<b>-0.11</b>
Newfoundland and Labrador	11,376	2.18	-1,821	-0.36	-11,121	-2.12	1,097	0.21	-6,540	-1.24
Prince Edward Island	1,479	1.08	-31	-0.02	2,096	1.46	2,906	1.99	2,564	1.59
Nova Scotia	9,020	0.97	-3,997	-0.43	5,075	0.54	7,395	0.79	-9,944	-1.00
New Brunswick	4,584	0.61	2,673	0.36	1,432	0.19	-5,992	-0.79	-317	-0.04
Quebec	-341	0.00	19,776	0.26	-23,207	-0.29	89,035	1.08	33,890	0.40
Ontario	11,548	0.10	24,532	0.19	121,217	0.92	68,329	0.49	-43,978	-0.30
Manitoba	-1,034	-0.09	-5,977	-0.51	21,464	1.74	5,358	0.41	-3,084	-0.22
Saskatchewan	16,013	1.60	-3,691	-0.37	-7,779	-0.73	12,492	1.10	12,402	1.06
Alberta	1,611	0.05	-50,869	-1.49	-3,345	-0.09	43,891	1.05	2,013	0.05
British Columbia	-4,385	-0.11	61,120	1.44	52,325	1.16	-104,201	-2.15	-29,372	-0.56
Yukon	-362	-1.20	-1,027	-3.19	103	0.29	-391	-1.02	150	0.35
Northwest Territories	496	1.22	-857	-1.99	758	1.74	-47	-0.11	1,146	2.57
Nunavut	49	0.17	-422	-1.37	-460	-1.35	172	0.47	-199	-0.50

**Note:** The error of closure is equal to the postcensal estimate (at the census date) minus the census count adjusted for census net undercoverage (including adjustment for incompletely enumerated reserves and settlements). The percentage is: error of closure, divided by the census count adjusted for census net undercoverage and incompletely enumerated reserves and settlements, multiplied by 100.

**Source:** Statistics Canada, Centre for Demography.

**Table 3**  
**Error of closure of estimates of population by census metropolitan area (CMA) and census agglomeration (CA), Canada,**  
**May 11, 2021**

	Error of closure	
	number	percent
<b>All census metropolitan areas and census agglomerations</b>	<b>40,309</b>	<b>0.1</b>
<b>Newfoundland and Labrador</b>		
St. John's	-3,308	-1.5
Grand Falls-Windsor	-48	-0.3
Gander	-360	-2.6
Corner Brook	-128	-0.4
<b>Prince Edward Island</b>		
Charlottetown	3,061	3.7
Summerside	-266	-1.4
<b>Nova Scotia</b>		
Halifax	1,196	0.2
Kentville	957	3.5
Truro	-523	-1.1
New Glasgow	-130	-0.4
Cape Breton	-2,989	-3.0
<b>New Brunswick</b>		
Moncton	1,311	0.8
Saint John	-185	-0.1
Fredericton	2,751	2.5
Bathurst	-196	-0.6
Miramichi	48	0.2
Campbellton (New Brunswick part)	-376	-3.1
Edmundston	-245	-1.1
<b>Quebec</b>		
Campbellton (Quebec part)	-72	-2.4
Matane	10	0.1
Rimouski	740	1.4
Rivière-du-Loup	-252	-0.8
Baie-Comeau	-18	-0.1
Saguenay	2,307	1.4
Alma	610	2.0
Dolbeau-Mistassini	82	0.5
Sept-Îles	326	1.2
Québec	-514	-0.1
Sainte-Marie	217	1.6
Saint-Georges	559	1.6
Thetford Mines	-80	-0.3
Sherbrooke	-1,512	-0.7
Cowansville	199	1.3
Victoriaville	99	0.2
Trois-Rivières	2,540	1.6
Shawinigan	1,106	2.2
Drummondville	1,109	1.1
Granby	863	0.9
Saint-Hyacinthe	27	0.0
Sorel-Tracy	441	1.0
Joliette	275	0.5
Montréal	20,604	0.5
Salaberry-de-Valleyfield	612	1.4
Sainte-Agathe-des-Monts	132	0.7
Lachute	-293	-2.1
Val-d'Or	319	0.9
Amos	23	0.1
Rouyn-Noranda	508	1.2
Hawkesbury (Quebec part)	26	1.4
Ottawa - Gatineau (Quebec part)	-3,847	-1.1

**Table 3**  
**Error of closure of estimates of population by census metropolitan area (CMA) and census agglomeration (CA), Canada,**  
**May 11, 2021**

	Error of closure	
	number	percent
<b>Ontario</b>		
Cornwall	-1,097	-1.7
Hawkesbury (Ontario part)	102	1.0
Ottawa - Gatineau (Ontario part)	-3,983	-0.3
Brockville	446	1.4
Pembroke	-1,244	-5.0
Petawawa	680	3.6
Kingston	-2,402	-1.3
Belleville - Quinte West	-1,595	-1.4
Cobourg	-1,072	-5.1
Port Hope	64	0.4
Peterborough	-571	-0.4
Kawartha Lakes	343	0.4
Centre Wellington	-181	-0.6
Oshawa	1,006	0.2
Ingersoll	-43	-0.3
Toronto	62,611	1.0
Hamilton	-5,007	-0.6
St. Catharines - Niagara	-8,726	-1.9
Kitchener - Cambridge - Waterloo	-4,330	-0.7
Brantford	-2,413	-1.5
Woodstock	-348	-0.7
Tillsonburg	-969	-5.2
Norfolk	1,178	1.7
Guelph	-3,313	-1.9
Stratford	-238	-0.7
London	-10,021	-1.8
Chatham-Kent	-539	-0.5
Windsor	-14,275	-3.2
Sarnia	-137	-0.1
Essa	421	1.8
Wasaga Beach	-937	-3.7
Owen Sound	409	1.2
Collingwood	-573	-2.2
Barrie	81	0.0
Orillia	-32	-0.1
Midland	256	0.9
North Bay	37	0.0
Greater Sudbury	-3,383	-1.9
Elliot Lake	-168	-1.4
Timmins	-332	-0.8
Sault Ste. Marie	109	0.1
Thunder Bay	-2,854	-2.2
Kenora	323	2.1
<b>Manitoba</b>		
Winnipeg	1,125	0.1
Winkler	1,162	3.5
Steinbach	-2,491	-13.6
Portage la Prairie	-372	-2.7
Brandon	367	0.7
Thompson	833	6.2
<b>Saskatchewan</b>		
Regina	6,691	2.6
Yorkton	-23	-0.1
Moose Jaw	-572	-1.6
Swift Current	30	0.2
Saskatoon	11,110	3.4
North Battleford	-132	-0.7
Prince Albert	-1,070	-2.3
Estevan	193	1.5
Weyburn	-189	-1.5
Lloydminster (Saskatchewan part)	1,010	5.8

**Table 3**  
**Error of closure of estimates of population by census metropolitan area (CMA) and census agglomeration (CA), Canada,**  
**May 11, 2021**

	Error of closure	
	number	percent
<b>Alberta</b>		
Medicine Hat	436	0.6
Brooks	-902	-5.8
Lethbridge	1,334	1.0
Okotoks	-28	-0.1
High River	-620	-4.2
Calgary	12,825	0.8
Strathmore	-630	-4.3
Canmore	-942	-5.7
Red Deer	1,053	1.0
Sylvan Lake	-1,159	-6.8
Lacombe	-888	-6.4
Camrose	-647	-3.3
Edmonton	4,898	0.3
Lloydminster (Alberta part)	-137	-0.7
Grande Prairie	1,356	2.0
Wood Buffalo	-1,066	-1.4
Wetaskiwin	-121	-0.9
<b>British Columbia</b>		
Cranbrook	-197	-0.7
Nelson	149	0.8
Trail	134	0.9
Penticton	-1,717	-3.5
Kelowna	-4,185	-1.8
Vernon	-1,695	-2.4
Salmon Arm	-609	-3.0
Kamloops	-1,650	-1.4
Chilliwack	585	0.5
Abbotsford - Mission	942	0.5
Vancouver	-11,323	-0.4
Squamish	-1,207	-4.8
Victoria	-442	-0.1
Ladysmith	-66	-0.4
Duncan	-227	-0.5
Nanaimo	-2,109	-1.8
Parksville	-197	-0.6
Port Alberni	216	0.8
Courtenay	-470	-0.7
Campbell River	498	1.2
Powell River	-596	-3.2
Williams Lake	143	0.6
Quesnel	240	1.0
Prince Rupert	394	2.8
Terrace	622	3.0
Prince George	2,399	2.6
Dawson Creek	2,209	11.8
Fort St. John	-284	-0.9
<b>Yukon</b>		
Whitehorse	387	1.1
<b>Northwest Territories</b>		
Yellowknife	932	4.3

**Note:** The error of closure is equal to the postcensal estimate (at the census date) minus the census count adjusted for census net undercoverage (including adjustment for incompletely enumerated reserves and settlements). The percentage is: error of closure, divided by the census count adjusted for census net undercoverage and incompletely enumerated reserves and settlements, multiplied by 100.

**Source:** Statistics Canada, Centre for Demography.



**Table 4**  
**Error of closure of the estimates of population by economic region (ER), May 11, 2021**

	Error of closure	
	number	percent
<b>All economic regions</b>	<b>-41,269</b>	<b>-0.1</b>
<b>Newfoundland and Labrador</b>		
Avalon Peninsula	-4,152	-1.5
South Coast–Burin Peninsula	-385	-1.1
West Coast–Northern Peninsula–Labrador	-363	-0.3
Notre Dame–Central Bonavista Bay	-1,640	-1.5
<b>Prince Edward Island</b>		
Prince Edward Island	2,564	1.6
<b>Nova Scotia</b>		
Cape Breton	-4,051	-3.0
North Shore	-2,934	-1.9
Annapolis Valley	-2,992	-2.3
Southern	-2,323	-2.0
Halifax	2,356	0.5
<b>New Brunswick</b>		
Campbellton–Miramichi	-1,393	-0.9
Moncton–Richibucto	-164	-0.1
Saint John–St. Stephen	-589	-0.3
Fredericton–Oromocto	1,951	1.3
Edmundston–Woodstock	-122	-0.2
<b>Quebec</b>		
Gaspésie–Îles-de-la-Madeleine	679	0.7
Bas-Saint-Laurent	155	0.1
Capitale-Nationale	-1,860	-0.2
Chaudière-Appalaches	2,090	0.5
Estrie	-1,310	-0.4
Centre-du-Québec	3,013	1.2
Montérégie	4,889	0.3
Montréal	13,379	0.7
Laval	2,246	0.5
Lanaudière	2,487	0.5
Laurentides	3,544	0.6
Outaouais	-3,571	-0.9
Abitibi-Témiscamingue	376	0.3
Mauricie	3,062	1.1
Saguenay–Lac-Saint-Jean	3,824	1.4
Côte-Nord	358	0.4
Nord-du-Québec	529	1.1
<b>Ontario</b>		
Ottawa	-15,384	-1.0
Kingston–Pembroke	-9,524	-1.9
Muskoka–Kawartha	-7,666	-1.8
Toronto	52,822	0.8
Kitchener–Waterloo–Barrie	-14,888	-1.0
Hamilton–Niagara Peninsula	-6,464	-0.4
London	-11,255	-1.5
Windsor–Sarnia	-16,575	-2.4
Stratford–Bruce Peninsula	-1,943	-0.6
Northeast	-8,371	-1.4
Northwest	-4,730	-1.9
<b>Manitoba</b>		
Southeast	-1,570	-1.2
South Central	1,527	2.2
Southwest	-343	-0.3
North Central	1,925	3.6
Winnipeg	-2,232	-0.3
Interlake	-1,493	-1.5
Parklands	-494	-1.2
North	-404	-0.4



## Methodology

### Related methodology notes

The two-way raking method is also referred to as the “Deming method”, the “method of iterative proportions”, and calibration (see Shryock, Siegel et al., 1976: 547-549).

Unless otherwise noted, the term preliminary includes both preliminary and updated estimates.

The T1 family file (T1FF) is derived from the Canada Revenue Agency (CRA) T1 file by the Centre for Income and Socioeconomic Well-being Statistics of Statistics Canada.

This document describes the concepts, data the sources and the methodology used to produce the population estimates. Population estimates are produced to measure the population counts according to various characteristics and geographies between two censuses. The demographic estimates are the official population estimates at the national, provincial, territorial and subprovincial levels.

Postcensal estimates are based on the 2021 Census.

## Population Estimates

### Types of estimates

Population estimates can either be intercensal or postcensal. Intercensal estimates are produced using counts from two consecutive censuses adjusted for census net undercoverage (CNU)<sup>2</sup> (including adjustment for incompletely enumerated reserves and settlements (IERS)) and postcensal estimates. The production of intercensal estimates consists of updating the postcensal estimates using the counts from a new census adjusted for CNU.

Postcensal estimates are produced using data from the most recent census adjusted for CNU and the components of population growth. In terms of timeliness, postcensal estimates are more up to date than data from the most recent census adjusted for CNU, but as they get farther from the date of that census, they become less reliable.

### Levels of estimates

Updating population estimates between censuses requires the use of data from administrative files or surveys. The quality of population estimates therefore depends on the availability of several administrative data files that are provided to Statistics Canada by Canadian and foreign government departments. Since some components are not available until several months after the reference date, three kinds of postcensal estimates are produced: preliminary postcensal (PP), updated postcensal (PR) and final postcensal (PD). The time lag between the reference date and the release date is three months for preliminary estimates and two to three years for final estimates. Though it requires more vigilance on the part of users, the production of three successive series of postcensal estimates is the strategy that best satisfies the need for both timeliness and accuracy of the estimates.

### Calculation of postcensal population estimates

Population estimates – preliminary, updated, and final – are produced using the component method. This method consists in taking the population figures from the most recent census, adjusted for CNU (undercoverage minus overcoverage), and adding or subtracting the number of births, deaths, and components of international and internal migration.

2. In this case, the adjustment for the census net undercoverage also includes the incompletely enumerated reserves and settlements.

## A. Subprovincial estimates

### Population estimates for census metropolitan areas, census agglomerations and census divisions

The component method is used to produce estimates for census metropolitan areas (CMAs), census agglomerations (CAs) and census divisions (CDs) by age and gender. The method is applied to each age-gender cohort in the base population.

The component method formulas for estimating the population of CMAs, CAs and CDs by age and gender are as follows:

At age 0:

$$P_{(t+1)}^0 = B_{(t,t+1)} - D_{(t,t+1)}^{-1} + I_{(t,t+1)}^{-1} - E_{(t,t+1)}^{-1} + RE_{(t,t+1)}^{-1} + \Delta NPR_{(t,t+1)}^{-1} + \Delta Ninter_{(t,t+1)}^{-1} + \Delta Nintra_{(t,t+1)}^{-1} + Resid_{(t,t+1)}^{-1}$$

From 1 to 99 years:

$$P_{(t+1)}^{a+1} = P_{(t)}^a - D_{(t,t+1)}^a + I_{(t,t+1)}^a - E_{(t,t+1)}^a + RE_{(t,t+1)}^a + \Delta NPR_{(t,t+1)}^a + \Delta Ninter_{(t,t+1)}^a + \Delta Nintra_{(t,t+1)}^a + Resid_{(t,t+1)}^a$$

For age group 100 years and older:

$$P_{(t+1)}^{100+} = P_{(t)}^{99+} - D_{(t,t+1)}^{99+} + I_{(t,t+1)}^{99+} - E_{(t,t+1)}^{99+} + RE_{(t,t+1)}^{99+} + \Delta NPR_{(t,t+1)}^{99+} + \Delta Ninter_{(t,t+1)}^{99+} + \Delta Nintra_{(t,t+1)}^{99+} + Resid_{(t,t+1)}^{99+}$$

where, for each subprovincial region:

$(t, t + 1)$	=	interval between times t and t+1
$a$	=	age
$P_{(t+1)}$	=	estimate of the population at time t+1
$P_{(t)}$	=	base population at time t (census adjusted for (CNU) <sup>3</sup> or most recent estimate)
$B$	=	number of births
$D$	=	number of deaths
$I$	=	number of immigrants
$E$	=	number of emigrants
$RE$	=	number of returning emigrants
$\Delta NPR$	=	net non-permanent residents
$\Delta Ninter$	=	net interprovincial migration
$\Delta Nintra$	=	net intraprovincial migration
$Resid$	=	residual deviation (for intercensal estimates).

To ensure concordance between the subprovincial estimates and the provincial and territorial estimates by age and gender, two-way raking is used.

3. In this case, the adjustment for the census net undercoverage also includes the incompletely enumerated reserves and settlements

## Special treatment for postcensal estimates for Quebec

Quebec's postcensal population estimates by age and gender at the of CDs, CMAs and CAs are calculated in accordance with the equations of the component method presented above, but some components are directly taken from the *Institut de la statistique du Québec* (ISQ) estimates. Special treatment specific to those components is explained in sections D and K.

## Population estimates for economic regions

A different method is used to produce population estimates for economic regions (ERs). In this case the census division's (CD) aggregate method is used. First, the ERs are defined in terms of CDs using the most recent Standard Geographical Classification (SGC) specifications. When the geographic delineation of the CDs and ERs are the same, no adjustment is required; the population estimates for the CDs that make up the ER are simply added together.

However, when the geographic delineation of the CD does not match that of the ER, i.e., when a CD is in more than one ER, distribution of the CD's demographic components are allocated on the basis of its demographic weight in each ER in question. The proportions are referred to as conversion factors. They are calculated using the most recent census counts.

Thus, demographic components (births, deaths and migration) initially measured at the CD level can be allocated to each ER. Using the census division's aggregate method by the ERs' geographic delineation, the population and demographic components of ERs can be estimated.

However, the census division's aggregate method cannot be used to estimate the number of intraprovincial in-migrants and out-migrants, since it overestimates those figures. In-migrants to a given CD from another CD in the same ER should not be counted since the migration occurred within the ER's boundaries. These are false in-migrants. The same is true for out-migrants from one CD to another CD in the same ER: they are false out-migrants. However, the net intraprovincial migration calculated with the CD aggregate method is correct because the false in-migrants and out-migrants cancel each other out. As a result, only the net intraprovincial migration of ERs can be estimated accurately using the CD aggregate method. This is why the estimates for intraprovincial in-migrants and out-migrants are not available at the ER level.

## Population estimates for census subdivisions

A different method is used to produce population estimates for census subdivisions (CSDs). Postcensal estimates are based on the latest census counts adjusted for census net undercoverage (including adjustment for incompletely enumerated reserves and settlements) and on the estimated population growth that occurred since that census, as calculated using fiscal data. Intercensal estimates are based on postcensal estimates and census counts adjusted of the censuses preceding and following the considered year.

Population estimates for CSDs in Quebec are provided by the *Institut de la statistique du Québec* (ISQ). Population estimates for CSDs in Alberta are provided by Alberta's *Office of Statistics and Information* (OSI) in current geography for July 1, 2022 and after. They are converted to the appropriate standard geographical classification (SGC) using geographical relationships provided by OSI. Due to this geographical difference, small discrepancies may exist between CSD populations released by Statistics Canada for Alberta and those found directly on the [OSI's website](#). CSD population estimates for Alberta prior to July 1, 2022 are produced using the same method adopted for provinces and territories that do not provide their own estimates.

Territorial-level population estimates for Yukon are produced by Statistics Canada, while census subdivision population estimates are supplied by the [Yukon Bureau of Statistics](#) for July 1, 2019 and after. Variations in total population estimates at the territorial level between both sources are due to methodological differences. Population estimates for census subdivisions in Northwest Territories are provided by the Northwest Territories Bureau of Statistics for July 1, 2001, and after. Data for unorganized regions is suppressed, resulting in total population estimate variations when comparing to estimates produced by Statistics Canada for other levels of geography.

To ensure consistency between the CSD and CD population estimates, the CSD population estimates produced by Statistics Canada are adjusted using two-way raking.

## B. Levels of estimates

The difference between preliminary and final postcensal population estimates lies in the timeliness of the components. When all the components are preliminary, the population estimate is deemed preliminary postcensal (PP). When all the components are final, the population estimate is deemed final postcensal (PD). Any other combination of levels is considered updated postcensal (PR).

## C. Base population and components of population growth

### Base population

The base populations are derived from the quinquennial censuses. The population universe of the 2021 Census includes the following groups:

- Canadian citizens (by birth or by naturalization), landed immigrants (permanent residents), and (since 1991) non-permanent residents. Non-permanent residents are persons who have claimed refugee status [asylum claimants], or persons who hold a work or study permit and their family members living with them.<sup>4</sup> All such persons are included in the population provided they have a usual place of residence in Canada.
- The total population also includes certain Canadian citizens and landed immigrants (permanent residents) living outside the country: government employees working outside Canada; embassy staff posted to other countries; members of the Canadian Armed Forces stationed outside Canada; and Canadian crew members of merchant vessels and their families. Together, they are referred to as 'persons living outside Canada.'
- Foreign residents are excluded from census data: for example, residents of another country visiting Canada temporarily, government representatives of another country posted in Canada and members of the armed forces of another country stationed in Canada.

These base populations are adjusted as follows:

- adjustment of the population for census net undercoverage (CNU);
- addition of independent estimates for incompletely enumerated reserves and settlements;
- Integration of population count amendments;
- at the provincial level, the first postcensal population estimate is July 1 of the census year. This is obtained by addition or subtraction of the components of growth between Census Day and June 30. At the subprovincial level, the estimate of the July 1 population estimate is obtained by applying to the annual components of growth, a fraction of the year that corresponds to the period between Census Day and June 30. These are adjusted to the appropriate provincial and territorial components.

### Adjustment for census net undercoverage (CNU)

The adjustment for CNU is important. The CNU is the difference between the number of persons who should have been enumerated but were missed (undercoverage) and the number of persons who were enumerated but should not have been or who were counted more than once (overcoverage).

To estimate census net undercoverage (CNU) at the subprovincial level, provincial and territorial CNU rates by age and gender are applied to census subdivisions (CSDs), which are aggregated to create the base population of higher subprovincial levels (census metropolitan areas (CMAs)), census agglomerations (CAs), and census divisions (CDs) in the province).

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4. The census universe also includes people with a usual place of residence in Canada, who hold a temporary resident permit (formerly known as a Minister's Permit), and their family members living with them.

## D. Births and deaths

The numbers of births and deaths for census divisions (CDs), census metropolitan areas (CMAs) and census agglomerations (CAs) are derived directly from the vital statistics database of Statistics Canada's Centre for Population Health Data. Although Statistics Canada manages the National system of vital statistics, the central vital statistics registries of the provinces and territories are responsible for collecting and processing the information from those administrative files. Under provincial and territorial vital statistics statutes (or similar legislation), all live births and all deaths must be registered, and all provinces and territories provide the information to Statistics Canada.

The vital statistics universe closely parallels the census universe. Both universes include births and deaths of all Canadians, immigrants, and non-permanent residents (NPR) and exclude foreign residents.

Vital statistics by province or territory of residence are used to produce our final estimates of births and deaths.

When there are no vital statistics, the number of births is estimated using fertility rates by mother's age. The number of deaths is estimated using mortality rates by age and gender. These methods are used to calculate preliminary estimates at the provincial and territorial levels.

### Levels of estimates

Estimates of births and deaths are categorized as final when they are directly taken from the vital statistics of Statistics Canada's Centre for Population Health Data. They are then adjusted to the provincial and territorial totals using a two-way raking process to ensure their concordance.

When no birth or death data are available, preliminary provincial or territorial estimates are broken down, using the most recent known subprovincial distribution derived from vital statistics of Statistics Canada's Centre for Population Health Data, to produce estimates by region. In that case, estimates of births and deaths are categorized as preliminary. They are then adjusted to the provincial and territorial totals using a two-way raking process to ensure their consistency.

### Special treatment for preliminary and updated postcensal estimates for Quebec, British Columbia, and Yukon

For birth and death components of Quebec's subprovincial areas, the estimates by age and sex at birth of the *Institut de la statistique du Québec* (ISQ) are used as a distribution for preliminary and updated estimates. It has been decided to use those data because they are available in a timelier manner. Final estimates of births and deaths for Quebec's subprovincial areas are derived from the vital statistics database of Statistics Canada's Centre for Population Health Data.

A special case is also relevant to the provincial and territorial totals on which subprovincial estimates are prorated. Quebec, British Columbia and Yukon provide their most recent estimates of births and deaths at the provincial or territorial level. These estimates are used for the preliminary and updated estimates. However, the final estimates of births and deaths for these provinces are derived directly from the vital statistics database of Statistics Canada's Centre for Population Health Data.

## E. Immigration

An immigrant refers to a person who is a permanent resident or a landed immigrant. Such a person has been granted the right to live in Canada permanently by immigration authorities. Persons who are born abroad to a Canadian parent are not immigrants but are included in the returning emigrant component.

For the Centre for Demography, the terms "immigrant", "landed immigrant" and "permanent resident" refer to the same concept.

Like the numbers of births and deaths, Canadian immigration statistics must be kept by law. In Canada, immigration is regulated by the Immigration and Refugee Protection Act (IRPA) of 2002. This statute superseded the Immigration Act, which was passed in 1976 and amended more than 30 times in the years thereafter. Immigration, Refugees and Citizenship Canada (IRCC) collects and processes permanent residents' administrative

files. It then provides Statistics Canada with information from Global Case Management System (GCMS) files (until October 2015, data came from the Field Operational Support System files (FOSS)). The information is used to estimate the number and characteristics of people granted permanent resident status by the federal government on a given date.

Estimates of the number of immigrants are based mainly on the date on which the person was granted permanent residence or landed in Canada.

To determine the subprovincial distributions where immigrants settle, their postal code information coming from IRCC's "mailing address file" is used for estimates of periods 2011-2012 and up.<sup>5</sup> When this information is missing, then their intended municipality of residence is used. Finally, to ensure their consistency, subprovincial estimates are then adjusted to the provincial and territorial totals using two-way raking.

## Levels of estimates

The difference between preliminary and final estimates lies in the timeliness of the sources used to estimate this component. Immigration estimates are preliminary the first year and final the following year. Since the subprovincial estimates of immigrants are adjusted to provincial and territorial estimates, the level of subprovincial estimates will be the same.

## F. Net non-permanent residents

Non-permanent resident refers to a person from another country with a usual place of residence in Canada and who has a work or study permit or who has claimed refugee status (asylum claimant, protected person and related groups).

Family members living with work or study permit holders are also included unless these family members are already Canadian citizens, landed immigrants (permanent residents), or non-permanent residents themselves.

For the Centre for Demography, the terms "non-permanent resident" and "temporary immigrant" refer to the same concept.

Like the numbers of births and deaths, Canadian immigration statistics must be kept by law. In Canada, temporary residents and asylum claimants are regulated by the *Immigration and Refugee Protection Act* (IRPA) of 2002. This statute superseded the *Immigration Act*, which was passed in 1976 and amended more than 30 times in the years thereafter. Immigration, Refugees and Citizenship Canada (IRCC), along with other government departments, collect and process the administrative files of asylum claimants. IRCC also collects and processes the administrative files of the holders of work, study and temporary residence permits in Canada. It then provides Statistics Canada with information from Global Case Management System (GCMS) files (until October 2015, data came from the Field Operational Support System files (FOSS)). This information is used as the basis for obtaining the number and characteristics of people who are granted temporary resident status by the federal government, or who are asylum claimants. Statistics Canada then applies various methodological adjustments, notably from the linkage of census and IRCC data, to obtain estimates of non-permanent residents (NPR).

The number of non-permanent residents, which have been provided by IRCC's administrative data, are estimated as of a specific reference date. First, the end-of-period number of NPR is estimated, and then the start-of-period number of NPR is subtracted from that estimate. That yields the net number of NPRs.

All non-permanent residents who have been admitted to Canada at a date prior to the reference date are included in the estimate. In the case of asylum claimants, protected persons and related groups, they are counted as NPR from the date of their application for refugee status in Canada.

A person will be excluded from the non-permanent resident estimate if they meet certain criteria which depend on whether they are a permit holder or asylum claimant, protected persons and related groups. A permit holder is excluded from the population if the permit expiry date is reached, if they obtain permanent resident status (in which case they leave the NPR population to be counted as an immigrant), or if they are deported. The same

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5. Estimates for periods prior to 2011-2012 from the vintage based on the Standard Geographical Classification 2021 were calculated using the information of immigrants' intended municipality of residence.



conditions also apply to asylum claimants, protected persons and related groups. However, since an asylum application has no end date, the person is considered to be in the country for a maximum of ten years.

In 2023, the method for estimating the number of NPRs in Canada was changed. The new method will be applied from July 2021 onwards. It includes new adjustments for:

- family members living with work or study permit holders who are not Canadian citizens, landed immigrants (permanent residents) or non-permanent residents themselves;
- delays in processing IRCC permit extensions, notably due to the COVID-19 pandemic; and
- open work permits for which the province or territory of intent is missing.

To determine the subprovincial distributions where NPRs settle, their postal code information coming from IRCC's "mailing address file" is used for estimates of periods 2011-2012 and up.<sup>6</sup> When this information is missing, then their intended municipality of residence is used. Finally, to ensure their consistency, subprovincial estimates are then adjusted to the provincial and territorial totals using two-way raking.

### Levels of estimates

The difference between preliminary, revised, and final estimates lies in the timeliness of the source used to estimate this component. NPR estimates are preliminary the first year and updated the following year. They become final two to three years after the reference year, when all other components are also final. Since the subprovincial estimates of the net number of NPRs are adjusted to provincial and territorial estimates, the level of the subprovincial estimates will be the same.

## G. Emigration

An emigrant is a Canadian citizen or immigrant who has left Canada to establish a long-term or short-term residence in another country, involving a change in usual place of residence. Short-term emigration used to be included in the net temporary emigration component. Only estimates of the number of emigrants, which combine short-term and long-term emigrants, are published.

Unlike immigration, there is no legal provision in Canada to maintain records for emigrants. Therefore, provincial/territorial estimates of the number of emigrants and their characteristics are reliant on secondary sources such as the Canada Child Benefit (CCB), T1 Family File (T1FF), immigration statistics from the United States and undercoverage Study (CUS). The distribution of long-term emigrants at the subprovincial level is derived by comparing addresses provided on personal income tax returns over two consecutive tax years, using the T1FF. Because the estimates are available only by broad age groups (0-17, 18-24, 25-44, 45-64, 65+), they are broken down by age and gender based on the provincial or territorial distribution. They are then adjusted to the provincial and territorial totals using two-way raking to ensure their consistency. Short-term emigrants are assumed to follow the same distribution as long-term emigrants.

### Levels of estimates

The difference between preliminary and final estimates lies in the timeliness of the sources used to estimate this component. Since the subprovincial estimates of emigrants are adjusted to provincial and territorial estimates, the level of the subprovincial estimates will be the same.

## H. Net temporary emigration

For demographic estimates from 1991 to June 2016, net temporary emigration represents the variation in the number of temporary emigrants between two dates. Temporary emigration includes Canadian citizens and immigrants living temporarily abroad who have not maintained a usual place of residence in Canada. From July 2016, net temporary emigration is distributed among emigrants and returning emigrants. Due to this change, the net temporary emigration component is no longer calculated from July 2016.

6. Demographic estimates from previous vintages, which were not based on the Standard Geographical Classification (SGC) 2021, were modelled according to the distribution from the most recent census (or NHS).

At the subprovincial level, net temporary emigration estimates by age and gender are broken down based on the subprovincial distribution of emigrants. They are then adjusted to the provincial and territorial totals using two-way raking to ensure their consistency.

### **Levels of estimates**

The subprovincial estimates of the net temporary emigration are final.

## **I. Returning emigrants**

A returning emigrant is a Canadian citizen or immigrant who has previously emigrated from Canada and subsequently returned to the country. Using a similar method that for emigration, short-term returning emigration used to be included in the net temporary emigration component. Only estimates of the number of returning emigrants, which combine short-term and long-term returning emigrants, are published.

The provincial and territorial estimates of the number of returning emigrants and their characteristics are reliant on secondary sources such as the Canada Child Benefit (CCB), T1 Family File (T1FF), census and Centre for Demography's estimates.

The distribution of long-term returning emigrants at the subprovincial level is derived by comparing addresses provided on personal income tax returns over two consecutive tax years, using the T1FF. . Because the estimates are available only by broad age groups (0-17, 18-24, 25-44, 45-64, 65+), they are broken down by age and gender based on the provincial or territorial distribution. They are then adjusted to the provincial and territorial totals using two-way raking to ensure their consistency. Short-term returning emigrants are assumed to follow the same distribution as short-term emigrants.

### **Levels of estimates**

The difference between preliminary and final estimates lies in the timeliness of the sources used to estimate this component. Since the subprovincial estimates of returning emigrants are adjusted to provincial and territorial estimates, the level of the subprovincial estimates will be the same.

## **J. Interprovincial migration**

Interprovincial migration represents movements from one province or territory to another, involving a change in usual place of residence. As is the case for emigration, there is no provision for recording interprovincial migration in Canada. Consequently, such movements are estimated using data from the Canada child benefit (CCB) of Canada Revenue Agency (CRA) and T1FF.

Final estimates of interprovincial migration are obtained by comparing addresses indicated on personal income tax returns over two consecutive tax years, by making use of the T1FF. However, the migration status of tax filers' dependents must be imputed. An adjustment is also required to consider migrants who do not file income tax returns.

The estimates by broad age groups and gender are broken down by age based on distributions stemming from the most recent census or NHS (for 2011) mobility question on place of residence one year ago. From 2011/2012 to 2020/2021, NHS and census distributions have been modelled to minimize the impact of outliers found in some subprovincial regions, mostly for smaller geographies. From 2021/2022, the distribution by single year of age and gender is based solely on the T1FF. Subprovincial estimates are then adjusted to the provincial and territorial totals using two-way raking to ensure their consistency.

Subprovincial estimates are then adjusted to the provincial and territorial totals using two-way raking to ensure their consistency.

### **Levels of estimates**

The difference between preliminary and final estimates lies in the timeliness of the sources used to estimate this component.

Because income tax returns are not available at the time preliminary estimates are produced, the method to estimate preliminary interprovincial migration is different. For subprovincial areas, CCB administrative files are used to determine the preliminary migration of children (aged 0 to 17), while the preliminary migration of adults is derived by using rates from the previous year, calculated with final data.

Since the subprovincial estimates of interprovincial migrants are adjusted to provincial and territorial estimates, the level of the subprovincial estimates will be the same.

## K. Intraprovincial migration

Intraprovincial migration represents movement from one region to another within the same province or territory, involving a change in usual place of residence. As is the case for emigration and interprovincial migration, there is no provision for recording intraprovincial migration in Canada. Consequently, such movements must be estimated using data from the Canada child benefit (CCB) of Canada Revenue Agency (CRA) and T1FF.

Final estimates of intraprovincial migration are obtained by comparing addresses indicated on personal income tax returns over two consecutive tax years, by making use of the T1FF. However, the migration status of tax filers' dependents must be imputed. An adjustment is also required to consider migrants who do not file income tax returns.

The components of intraprovincial migration derived from the T1FF for each subprovincial region are produced by broad age groups and gender. They are then broken down by age based on distributions stemming from the most recent census or NHS (for 2011) mobility question on place of residence one year ago. From 2011/2012 to 2020/2021, NHS and census distributions have been modelled to minimize the impact of outliers found in some subprovincial regions, mostly for smaller geographies. From 2021/2022, the distribution by single year of age and gender is based solely on the T1FF.

### Levels of estimates

The difference between preliminary and final estimates lies in the timeliness of the sources used to estimate this component.

Because income tax returns are not available at the time preliminary estimates are produced, the method to estimate preliminary intraprovincial migration is different. For subprovincial areas, CCB administrative files are used to determine the preliminary migration of children (aged 0 to 17), while the preliminary migration of adults is derived by using rates from the previous year, calculated with final data.

### Special treatment for Quebec's estimates

In the case of the component of intraprovincial migration for Quebec's subprovincial areas, ISQ data are used for preliminary, updated, and final estimates. These estimates are based on data from the *Fichier d'inscription des personnes assurées* (FIPA), the health-insured persons register, from the *Régie de l'assurance-maladie du Québec* (RAMQ). It has been decided to use those data because the provincial data source is more complete and is available in a timelier manner.

## L. Intercensal population estimates

Intercensal estimates – population estimates for reference dates between two censuses – are produced following each census. They reconcile previous postcensal estimates with the new census counts.

There are three main steps in the production of intercensal estimates:

- the correspondence of the geographic boundaries between the two censuses
- calculation of the error of closure
- linear distribution of the error of closure (residual deviation).

To ensure geographical concordance, the base populations and components of population growth must be adjusted according to geographical boundaries at the time of the most recent census. For areas whose geographical boundaries changed between the two censuses (as measured by the SGC), historical conversion factors are used based on population transfers at the census subdivision level during the most recent intercensal period. In general, corrections to CDs, CMAs, CAs and ERs are minor (see the “Quality of demographic data” section).

Error of closure is defined as the difference between the postcensal population estimates on census day and the population enumerated in that census adjusted for census net undercoverage (CNU).<sup>7</sup> The error of closure is spread evenly over the intercensal period, based on the number of days in each month. Intercensal estimates by age and gender are adjusted the same way (i.e., by distributing the error of closure evenly across the age and gender cohorts). As with postcensal estimates, the intercensal subprovincial estimates by age and gender are adjusted to provincial and territorial estimates using two-way raking to ensure their consistency.

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7. In this case, the adjustment for the census net undercoverage also includes the incompletely enumerated reserves and settlements.

## Appendix A: Glossary

### Age

Age as of July 1.

### Aging (of a population)

An increase in the **number of older persons** as a percentage of the total population.

### Average absolute error of closure

Defined as the mean of the absolute differences between the **postcensal estimates** on Census Day and the results of the **Census adjusted for the census net undercoverage**.

### Average age

The average age of a population is the average age of all its members.

### Census coverage

**Census net undercoverage:** Difference between undercoverage and overcoverage.

**Overcoverage:** Number of persons who should not have been counted in the census or who were counted more than once.

**Undercoverage:** Number of persons who were intended to be enumerated in a census but were not.

### Census agglomeration (CA)

A census agglomeration (CA) is formed by one or more adjacent municipalities centered on a population centre (known as the core). A CA must have a core population of at least 10,000 based on data from the previous Census of Population Program. To be included in the CA, other adjacent municipalities must have a high degree of integration with the core, as measured by commuting flows derived from data on place of work from the previous Census Program.

If the population of the core of a CA falls below 10,000, the CA is retired from the next census. All areas inside the CA that are not population centres are rural areas.

When a CA has a core of at least 50,000, based on data from the previous Census of Population, it is subdivided into census tracts. Census tracts are maintained for the CA even if the population of the core subsequently falls below 50,000.

### Census division (CD)

Census division (CD) is the general term for provincially legislated areas (such as county, municipalité régionale de comté and regional district) or their equivalents. Census divisions are intermediate geographic areas between the province level and the municipality (census subdivision).

In Newfoundland and Labrador, Manitoba, Saskatchewan, Alberta, Yukon, Northwest Territories and Nunavut, provincial or territorial law does not provide for these administrative geographic areas. Therefore, Statistics Canada, in cooperation with these provinces and territories, has created equivalent areas called census divisions for the purpose of disseminating statistical data. In Yukon, the census division is equivalent to the entire territory.

## Census metropolitan area (CMA)

A census metropolitan area (CMA) is formed by one or more adjacent municipalities centered on a population centre (known as the core). A CMA must have a total population of at least 100,000 of which 50,000 or more must live in the core. To be included in the CMA, other adjacent municipalities must have a high degree of integration with the core, as measured by commuting flows derived from census place of work data.

Once an area becomes a CMA, it is retained as a CMA even if its total population declines below 100,000 or the population of its core falls below 50,000. Small population centres with a population count of less than 10,000 are called fringe. All areas inside the CMA that are not population centres are rural areas.

All CMAs are subdivided into census tracts.

The CMA of Ottawa-Gatineau (Ontario-Quebec) crosses provincial boundaries. When the geographic level selected is all of Canada, the totals include the CMA on both sides of the provincial border. If a province has been selected, only the part of the CMA in the province chosen is included in the totals.

## Cohort

Represents a group of persons who have experienced a specific demographic event during a given year. In the case of births, persons born within a specified year are referred to as a generation.

## Components of demographic growth

All demographic events (births, deaths and migrations) that influence the size or the age and gender composition of the population.

## Demographic dependency ratio

The ratio of the combined population aged between **0 to 14 years old** and the population **aged 65 years and older** to the population aged between **15 and 64 years old**.

## Economic region (ER)

An economic region is a grouping of complete **census divisions** (with one exception in Ontario) created as a standard geographic unit for analysis of regional economic activity.

Within the province of Quebec, economic regions (“régions administratives”) are designated by law. In all other provinces or territories, economic regions are created by agreement between Statistics Canada and the provinces or territories concerned. Prince Edward Island and the three territories each consist of one economic region. In Ontario, there is one exception where the economic region boundary does not respect **census division** boundaries: the **census division** of Halton is split between the ER of Hamilton–Niagara Peninsula and the ER of Toronto.

## Emigrant

Canadian citizen or **immigrant** who has left Canada to establish a residence in another country, involving a change in usual place of residence. Emigration may be either long-term or short-term.

## Error of closure

Difference between the **postcensal estimate** at the census date and the results of the census adjusted for **census net undercoverage** (including adjustment for incompletely enumerated reserves and settlements).

## Gender

Gender refers to an individual's personal and social identity as a man, woman or non binary person (a person who is not exclusively a man or a woman).

Gender includes the following concepts:

- gender identity, which refers to the gender that a person feels internally and individually;
- gender expression, which refers to the way a person presents their gender, regardless of their gender identity, through body language, aesthetic choices or accessories (e.g., clothes, hairstyle and makeup), which may have traditionally been associated with a specific gender.

A person's gender may differ from their sex at birth, and from what is indicated on their current identification or legal documents such as their birth certificate, passport or driver's license. A person's gender may change over time.

Some people may not identify with a specific gender.

## Generation

Unless otherwise specified, refers here to a group of persons born within a given period. The 2006 generation represents people born during the year 2006.

## Immigrant

An **immigrant** refers to a person who is a permanent resident or a landed immigrant. Such a person has been granted the right to live in Canada permanently by immigration authorities. Persons who are born abroad to a Canadian parent are not immigrants but are included in the returning emigrant component.

For the Centre for Demography, the terms "immigrant", "landed immigrant" and "permanent resident" refer to the same concept.

## Incompletely enumerated reserves and settlements

Reserves and settlements for which enumeration either was not permitted or could not be completed for various reasons, such as evacuations because of forest fires or access restrictions due to the COVID-19 pandemic.

## Internal migration

Internal migration represents all movements of persons within Canada's geographical boundaries, involving a change in usual place of residence. Internal migration denotes movement from one province or territory to another (i.e., **interprovincial migration**) and movements from some other smaller defined geographical unit to another (i.e., **intraprovincial migration**).

## International migration

International migration represents movement of population between Canada and a foreign country which involves a change of the usual place of residence. A distinction is made with regard to **immigrants**, **emigrants**, **returning emigrants** and **net non-permanent residents**.

## Interprovincial migration

Interprovincial migration represents all movement from one province or territory to another involving a change in the usual place residence. A person who takes up residence in another province or territory is an **out-migrant** with reference to the province or territory of origin and an **in-migrant** with reference to the province or territory of destination.

## **Intraprovincial migration or subprovincial migration**

Intraprovincial migration or subprovincial migration represents all movement from one region to another within the same province or territory involving a change of the usual place residence. A person who takes up residence in another region is an **out-migrant** with reference to the region of origin and an **in-migrant** with reference to the region of destination.

## **Long-term emigrant**

Citizen or landed immigrant who has left the country to take up long-term residence in another country.

## **Long-term returning emigrant**

Canadian citizen or landed immigrant who has already emigrated from Canada on a long-term basis and subsequently returned to live in Canada.

## **Median age**

The median age is an age “x”, such that exactly one half of the population is older than “x” and the other half is younger than “x”.

## **Men+**

The gender category “Men+” includes men (and/or boys), as well as some non-binary persons.

## **Natural increase**

Variation of the **population** size over a given period as a result of the difference between the numbers of births and deaths.

## **Net emigration**

Net emigration is obtained according to the following formula: **Emigrants - Returning emigrants**. For estimates from 1991 to June 2016, net emigration is obtained according to the following formula: **(Emigrants + Net temporary emigration) - Returning emigrants**.

## **Net internal migration**

Sum of **net intraprovincial** and **net interprovincial migration**.

## **Net international migration**

Net international migration is obtained according to the following formula: **Immigrants + Net non-permanent residents – Net emigration**.

## **Net interprovincial migration**

Net interprovincial migration represents the difference between **in-migrants** and **out-migrants** for a given province or territory.

## **Net intraprovincial migration**

Net intraprovincial migration represents the difference between **in-migrants** and **out-migrants** in a given region. A region can be defined as a **census division**, an **economic region** or a **census metropolitan area**.

## **Net non-permanent residents**

Net non-permanent residents represent the variation in the number of **non-permanent residents** between two dates.



## Net temporary emigration

For demographic estimates from 1991 to June 2016, net temporary emigration represents the variation in the number of temporary emigrants between two dates. Temporary emigration includes Canadian citizens and **immigrants** living temporarily abroad who have not maintained a usual place of residence in Canada. From July 2016, net temporary emigration is distributed among emigrants and returning emigrants.

## Non-permanent residents

Non-permanent resident refers to a person from another country with a usual place of residence in Canada and who has a work or study permit or who has claimed refugee status (asylum claimant, protected person and related groups).

Family members living with work or study permit holders are also included unless these family members are already Canadian citizens, landed immigrants (permanent residents), or non-permanent residents themselves.

For the Centre for Demography, the terms “non-permanent resident” and “temporary immigrant” refer to the same concept.

## Population

Estimated population and population according to the census are both defined as being the number of Canadians whose usual place of residence is within that area, regardless of where they happened to be on Census day. Also included are any Canadians staying in a dwelling in that area on Census day and having no usual place of residence elsewhere in Canada, as well as those considered **non-permanent residents**.

## Population estimate

**Postcensal:** Population estimate produced by using data from the most recent available census adjusted for **census net undercoverage** (including adjustment for incompletely enumerated reserves and settlements) and estimate of the **components of demographic growth** since that last census. This estimate can be preliminary, updated or final.

**Intercensal:** Population estimate derived by using **postcensal estimates** and data adjusted for **census net undercoverage** (including adjustment for incompletely enumerated reserves and settlements) of censuses preceding and following the year in question.

## Population growth or total growth

Variation of population size between two dates. It can also be obtained by summing the **natural increase**, **total net migration** and if possible, subtract **residual deviation**. It can be positive or negative.

## Precocity error

Difference between preliminary and final estimate in terms of its relative proportion of the total population for the relevant geographical area. It can be calculated for either population estimates or components of population growth.

## Rate

Refers to the ratio of the number of events estimated in a year ( $t$ ,  $t+1$ ) to the average populations at the beginning and the end of the period. In this regard, births, deaths, immigration rates, etc are calculated. Generally, the rates are expressed in per 1,000.

**Demographic growth or population growth:** Ratio of population growth between the year  $t$  and  $t+1$ , to the average **population** of both these years. The rate is generally expressed in per 1,000.

**Census net undercoverage of population:** Difference between **undercoverage rate** and **overcoverage rate**.

**Overcoverage of population:** The ratio of the number of persons who should not have been counted in the census or who were counted more than once to the total number of persons that should have been enumerated in the census. Generally, the rate is expressed in percentage.

**Undercoverage of population:** The ratio of the estimated number of persons not enumerated in the census (who were intended to have been enumerated) to the total number of persons that should have been enumerated in the census. Generally, the rate is expressed in percentage.

### **Residual deviation**

Difference between demographic **population growth** calculated using **intercensal estimates of population** between two dates and that obtained by the sum of the components for the same period. This deviation results from the distribution of the **error of closure** (by using the number of days) over the five-year period concerned.

### **Returning emigrant**

Canadian citizen or **immigrant** having previously emigrated from Canada and subsequently returned to the country. Returning emigration may be either long-term or short-term.

### **Sex at birth**

Sex at birth refers to sex assigned at birth. Sex at birth is typically assigned based on a person's reproductive system and other physical characteristics.

Sex at birth may also be understood as the sex recorded at a person's birth (for example, what was recorded on their birth certificate).

### **Short-term emigrant**

Citizen or landed **immigrant** who has left the country to take up short-term residence in another country.

### **Short-term returning emigrant**

Canadian citizen or landed **immigrant** who has already emigrated from Canada on a short-term basis and subsequently returned to live in Canada.

### **Sprague coefficients**

Series of factors which, when multiplied to a population distributed by multiples age groups, give a distribution of the same population by single years of age.

### **Total net migration**

Sum of **net international** and **net internal migration**.

### **Vital statistics**

Includes all the demographic events (births, deaths, marriages and divorces) for which there are a legal requirement to inform the Provincial or Territorial Registrar's Office.

### **Women+**

The gender category "Women+" includes women (and/or girls), as well as some non-binary persons.

### **Year**

Unless otherwise specified, the term "year" refers to the period beginning July 1 of a given year and ending June 30 of the following year.

## Appendix B: Explanatory notes for the tables

### Annual population estimates, July 1, subprovincial perspective

#### Population

Population estimates for July 1 are final intercensal up to 2020, final postcensal for 2021, updated postcensal for 2022 and preliminary postcensal for 2023.

### Annual estimates of demographic components

#### Births

The numbers of births are final up to 2020/2021, updated for 2021/2022 and preliminary for 2022/2023.

#### Deaths

The numbers of deaths are final up to 2020/2021, updated for 2021/2022 and preliminary for 2022/2023.

#### Immigrants

The numbers of immigrants are final up to 2021/2022 and preliminary for 2022/2023.

#### Emigrants

The numbers of emigrants are final up to 2020/2021, updated for 2021/2022 and preliminary for 2022/2023.

#### Returning emigrants

The numbers of returning emigrants are final up to 2020/2021, updated for 2021/2022 and preliminary for 2022/2023.

#### Net temporary emigrants

The numbers of net temporary emigrants are final up to 2015/2016.

#### Net non-permanent residents

The numbers of net non-permanent residents are final up to 2020/2021, updated for 2021/2022 and preliminary for 2022/2023.

#### Interprovincial in-migrants

The numbers of interprovincial in-migrants are final up to 2021/2022 and preliminary for 2022/2023.

#### Interprovincial out-migrants

The numbers of interprovincial out-migrants are final up to 2021/2022 and preliminary for 2022/2023.

#### Intraprovincial in-migrants

The numbers of intraprovincial in-migrants are final up to 2021/2022 and preliminary for 2022/2023.

#### Intraprovincial out-migrants

The numbers of intraprovincial out-migrants are final up to 2021/2022 and preliminary for 2022/2023.

## Annual population estimates and factors of growth

### Natural increase

Natural increase is final up to 2020/2021, updated for 2021/2022 and preliminary for 2022/2023.

### Net international migration

Net international migration numbers are final up to 2020/2021, updated for 2021/2022 and preliminary for 2022/2023.

### Net interprovincial migration

Net interprovincial migration numbers are final up to 2021/2022 and preliminary for 2022/2023.

### Net intraprovincial migration

Net intraprovincial migration numbers are final up to 2021/2022 and preliminary for 2022/2023.

### Total net migration

Total net migration numbers are final up to 2020/2021, updated for 2021/2022 and preliminary for 2022/2023.

### Total growth

Numbers for total growth are final up to 2020/2021, updated for 2021/2022 and preliminary for 2022/2023.

**Table B.1**  
**Summary of levels**

	2020 and before	2021	2022	2023
Population	ID	PD	PR	PP

ID Final Intercensal

PD Final Postcensal

PR Updated Postcensal

PP Preliminary Postcensal

Source: Statistics Canada, Centre for Demography.

**Table B.2**  
**Summary of levels**

	2015/2016 and before	2016/2017 to 2020/2021	2021/2022	2022/2023
<b>Natural increase</b>				
Births	D	D	R	P
Deaths	D	D	R	P
<b>Net international migration</b>				
Immigrants	D	D	D	P
Emigrants	D	D	R	P
Returning emigrants	D	D	R	P
Net temporary emigrants	D	..	..	..
Net non-permanent residents	D	D	R	P
<b>Net interprovincial migration</b>				
Interprovincial in-migrants	D	D	D	P
Interprovincial out-migrants	D	D	D	P
<b>Net intraprovincial migration</b>				
Intraprovincial in-migrants	D	D	D	P
Intraprovincial out-migrants	D	D	D	P

.. not available for a specific reference period

**D Final**

**R Updated**

**P Preliminary**

Source: Statistics Canada, Centre for Demography.

## Appendix C: Sources and remarks

### Base population

May 11, 2021 Census of Population adjusted to July 1 and corrected for census net undercoverage (including incompletely enumerated reserves and settlements, and population reviews).

2021 Census: Statistics Canada, Census of Canada, 2021, Catalogue no. [98-304](#).

Census net undercoverage: See The Daily, September 27, 2023.

Incompletely enumerated reserves and settlements: See The Daily, September 27, 2023.

### Births and deaths

Statistics Canada, Centre for Population Health Data. For Quebec, preliminary and updated births and deaths were provided by the Institut de la statistique du Québec.

#### Births adjustments

Births provided by the Centre for Population Health Data were incomplete for Nova Scotia for August to December 2021 and for Manitoba for all of 2021, 2022 and 2023. For these two places, birth counts were replaced by estimates based on the fertility rates from 2020. The distribution of births by gender for Manitoba for 2021, 2022 and 2023 were based on the gender breakdown of births in Manitoba from 2017/2018 to 2019/2020.

### Immigration

Estimates are produced by the Centre for Demography using the Global Case Management System (GCMS) files from Immigration, Refugees and Citizenship Canada (IRCC) received on August 15, 2023.

For methodological reasons, the estimates of immigrants released by the Demographic Estimates Program may differ from those released by IRCC. In the event of a discrepancy between the two sources, the official numbers of immigrants will continue to be those released by IRCC.

### Non-permanent residents

Estimates are produced by the Centre for Demography using the Global Case Management System (GCMS) files from the Immigration, Refugees and Citizenship Canada (IRCC) received on August 15, 2023. Further methodological adjustments derived from a linkage between censuses and IRCC data are then applied.

Since March 17, 2022, persons with the Canada-Ukraine Authorization for Emergency Travel (CUAET) who are on Canadian soil are included.

### Emigration and returning emigrants

For the subprovincial areas, the components (emigration and returning emigrants) are extracted from tax files by broad age groups and gender. They are calculated using the T1 Family File (T1FF) provided by the Centre for Income and Socioeconomic Well-being Statistics of Statistics Canada. The data is then broken down by single year of age and gender based on aggregated distributions of urban and rural areas. To ensure their consistency, the estimates are subsequently controlled to the provincial and territorial components.

## **Net temporary emigrants**

Before July 2016, short-term emigrants and short-term returning emigrants were included in the “net temporary emigration” component. After this date, they are included in the emigrant and returning emigrant components, using a slightly different methodology. Due to this change, the net temporary emigration component is no longer calculated from July 2016 onwards.

## **Net interprovincial migration and net intraprovincial migration**

For the subprovincial areas, the components (in- and out-migrants for interprovincial and intraprovincial migration) are extracted from tax files by broad age groups and gender. They are calculated using the T1FF provided by the Centre for Income and Socioeconomic Well-being Statistics of Statistics Canada as well as data from Canada Revenue Agency (CRA) Canada child benefit files (CCB) program. For years up to 2020/2021, the data is broken down by single year of age and gender based on the mobility information from Census. Starting in 2021/2022, the distribution by single year of age and gender is based solely on the T1FF. To ensure their consistency, the components for interprovincial migration are subsequently controlled to the provincial and territorial totals.

For Quebec, intraprovincial migration data were provided by the Institut de la statistique du Québec.

## Related products

### Selected publications from Statistics Canada

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91-002-X	Quarterly Demographic Estimates
91-003-X	Canadian Demographics at a Glance
91-209-X	Report on the Demographic Situation in Canada
91-215-X	Annual Demographic Estimates: Canada, Provinces and Territories
91-520-X	Population Projections for Canada, Provinces and Territories
91-528-X	Population and Family Estimation Methods at Statistics Canada

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### Selected tables from Statistics Canada

#### Tables 17-10-0148 to 17-10-0155 contain data about subprovincial areas.

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17-10-0148	Population estimates, July 1, by census metropolitan area and census agglomeration, 2021 boundaries
17-10-0149	Components of population change by census metropolitan area and census agglomeration, 2021 boundaries
17-10-0150	Population estimates, July 1, by economic region, 2021 boundaries
17-10-0151	Components of population change by economic region, 2021 boundaries
17-10-0152	Population estimates, July 1, by census division, 2021 boundaries
17-10-0153	Components of population change by census division, 2021 boundaries
17-10-0154	Interprovincial and intraprovincial migrants, by census metropolitan area and census agglomeration of origin and destination, 2021 boundaries
17-10-0155	Population estimates, July 1, by census subdivision, 2021 boundaries
17-10-0005	Population estimates on July 1st, by age and gender
17-10-0006	Estimates of deaths, by age and gender, annual
17-10-0008	Estimates of the components of demographic growth, annual
17-10-0009	Population estimates, quarterly
17-10-0014	Estimates of the components of international migration, by age and gender, annual
17-10-0015	Estimates of the components of interprovincial migration, by age and gender, annual
17-10-0016	Estimates of births, by gender, annual
17-10-0020	Estimates of the components of interprovincial migration, quarterly
17-10-0021	Estimates of the components of interprovincial migration, annual
17-10-0022	Estimates of interprovincial migrants by province or territory of origin and destination, annual
17-10-0040	Estimates of the components of international migration, quarterly
17-10-0045	Estimates of interprovincial migrants by province or territory of origin and destination, quarterly
17-10-0059	Estimates of the components of natural increase, quarterly
17-10-0060	Estimates of population as of July 1st, by marital status or legal marital status, age and sex

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### Selected surveys from Statistics Canada

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3601	Estimates of Total Population, Canada, Provinces and Territories
3604	Estimates of Population by Age and Gender for Canada, Provinces and Territories
3605	Estimates of Population by Marital Status, Legal Marital Status, Age and Sex for Canada, Provinces and Territories
3608	Estimates of Population by Age and Gender for Census Divisions, Census Metropolitan Areas and Economic Regions (Component Method)

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