

2011-2046 British Columbia Indigenous Population Estimates and Projections: Methodology and Assumptions

PREPARED BY BC STATS – JULY 2025

AUTHORS

BC Stats

CONTACT

[BC Stats Client Hub](#)

Copyright © 2025, BC Stats. All rights reserved.

This material is owned by BC Stats and protected by copyright law. It may not be reproduced or redistributed without the prior written permission of BC Stats. To request permission to reproduce all or part of this material, please complete the copyright permission request form at <http://www.gov.bc.ca/com/copy/req>.

Contents

- 1. Executive Summary 3
- 2. Introduction 7
- 3. Methodology and Assumptions 8
 - 3.1. Definition of Target Population 8
 - 3.2. Population Estimates 9
 - 3.3. Population Projections 11
 - 3.3.1. Component/Cohort-Survival Method 11
 - 3.3.2. Base Population 12
 - 3.4. Geography 12
- 4. Fertility 14
 - 4.1. Fertility Estimates 14
 - 4.2. Fertility Projections 15
- 5. Mortality..... 20
 - 5.1. Mortality Estimates 20
 - 5.2. Mortality Projections..... 21
- 6. Migration 22
 - 6.1. Intra-Provincial Migration 22
 - 6.2. Inter-Provincial Migration 22
 - 6.3. Response Mobility 22
- 7. Conclusion 25
- 8. References 26

1. Executive Summary

Since 2008, BC Stats has produced population estimates and projections of Indigenous communities in British Columbia. These projections were last updated in 2019. These population estimates and projections have been prepared for different sub-provincial areas of B.C., including regions of the Ministry of Health (MoH) and the Ministry of Child and Family Development (MCFD).

This document presents the methodology and assumptions used to produce the population estimates and projections by Indigenous identity published by BC Stats in 2025. The key sources of information used to produce this report were the Census (various years), B.C. Vital Statistics vital events database (births and deaths), and the B.C. population estimates produced by BC Stats for the corresponding areas.¹

The population estimates by Indigenous identity were produced for the following distinctions-based groups: i) First Nations,² ii) Métis, iii) Inuit, and iv) Other.³ A summary of findings is detailed below:

- There were an estimated 327,000 individuals identified as Indigenous in British Columbia in July 2024, accounting for 5.7% of B.C.'s population (5.7 million).
- First Nations were estimated to be the largest Indigenous group in B.C. in 2024, representing 201,000 individuals, or 61.4% of the population that self-identified as Indigenous in B.C. They were followed by individuals who self-identified as Métis, with 113,000 individuals (34.6%), and Inuit and Other Indigenous peoples representing 0.7% and 3.3% of the estimated population who identify as Indigenous, respectively.

¹ The Census data was obtained via a custom request to Statistics Canada. The birth and mortality data were obtained from the B.C. Vital Statistics Agency via the Ministry of Health. The population estimates for Health and MCFD geographies are available at the BC Stats' [population app](#).

² The term First Nations corresponds to the North American Indian group as [defined in the Census published by Statistics Canada](#).

³ The 'Other' group includes individuals who identify with more than one of the distinctions-based groups considered in the analysis (First Nations, Métis or Inuit) [defined in the Census published by Statistics Canada](#).

- The Indigenous population of B.C. is projected to increase to 483,000 by 2046. This represents an increase of 47.8% relative to the population estimated in 2024, averaging an annual population growth of 1.8%.
- First Nations are expected to increase to 284,000 by 2046 and will continue to represent the majority of the Indigenous population in the province. The Métis population is expected to be the fastest-growing Indigenous group in B.C., reaching 182,000 by 2046, an average annual growth of 2.2%. Inuit and Other Indigenous populations are expected to reach a combined population of 16,000 by 2046, an average annual growth of 1.0% between 2024 and 2046.

This edition of the Indigenous population estimates and projections for the sub-provincial areas of British Columbia introduces numerous methodological changes relative to the previous projections that were published in 2019. These methodology improvements take into account the availability of new sub-provincial fertility data as well as recent publications in the literature that have informed the assumptions applied to these projections.

Table 1 summarises the estimation methodology and the projection assumptions used in this update. The largest changes introduced in this edition regarding the Indigenous population estimates include:

- The fertility and mortality data are estimated using sub-provincial B.C. Vital Statistics and Census data.
- The response mobility rate is estimated using the residual method proposed in Guimond (1999), given the migration, fertility and mortality rates.⁴

This edition uses the same components of population change that were used in previous editions: i) fertility, ii) mortality, iii) migration, and iv) response mobility.⁵ Similar to the estimates, the projections also introduced informed changes to the components' assumptions:

⁴ In the previous edition of these projections, the response mobility rate was obtained from other publications, such as the provincial-level Indigenous population estimates and projections from Statistics Canada.

⁵ The response mobility was denominated as “ethnic mobility rate” in previous editions of these projections. In this edition the name of this component of population change has been named following the suggestion of O’Donnell and LaPointe (2019).

- The fertility and mortality rates are assumed not to converge with the rates for the non-Indigenous population over time. This assumption is in line with recent literature that suggests that there has been no convergence in these rates in recent years (Katz et al. 2019 and Morency et al. 2018).
- Instead, the gap between Indigenous communities' fertility and mortality rates and the provincial average is assumed to stay constant over the projection period, following similar assumptions to the ones taken in Statistics Canada (2022).
- The disparities in rates between Indigenous and non-Indigenous populations reflect the ongoing impacts of settler colonialism which contribute to Indigenous-specific racism and intergenerational trauma. These factors reinforce deeply embedded ideologies and systemic discrimination, perpetuating social and health inequities affecting Indigenous communities.
- Given the low levels of international migration in the Indigenous population, this component is assumed to be zero, similar to the approach to projections for the Indigenous population prepared by other statistical agencies (Statistics Canada, 2022).
- The response mobility rate is assumed to remain constant throughout the projection horizon. This rate is calculated using the weighted average of the response mobility calculated for the periods 2011-2016 and 2016-2021.

TABLE 1. METHODOLOGICAL AND ASSUMPTIONS SUMMARY OF THE POPULATION ESTIMATES AND PROJECTIONS OF THE INDIGENOUS POPULATION IN BRITISH COLUMBIA

Components	Estimation Methodology	Projection Assumptions
Fertility	Based on a panel approach that combines birth and Census data to obtain age-specific fertility rates by Indigenous identity.	The age-specific fertility rates for the Indigenous population are expected to maintain the same relative difference when compared to the provincial-level fertility rates.
Mortality	Obtained from the mortality rates by Indigenous identity calculated by Dion et al. (2024) for B.C.	The age-specific mortality rates for the Indigenous population are expected to maintain the same relative difference when compared to the provincial rate.
International Migration	The estimates and projections assume no international migration for Indigenous people.	
Intra-Provincial Migration	Calculated directly from Census data	Net intra-provincial migration remains constant over the projection
Inter-Provincial Migration	Calculated directly from Census data	Net inter-provincial migration remains constant over the projection
Response Mobility	Calculated as a residual using the methodology suggested by Guimond (1999)	Assumed to remain constant at the average of the two last Censuses.

2. Introduction

In 2009, BC Stats established a methodology for producing population estimates and projections for the Indigenous population in British Columbia. This edition introduces some methodological updates to the fertility and mortality estimates and projections, described in subsequent chapters. These population estimates and projections focus on reporting B.C.'s Indigenous population and distinction-based groups (First Nations, Métis, Inuit, Other) by age and gender. Results are aggregated provincially and by the sub-provincial administrative regions established by the Ministry of Health and the Ministry of Children and Family Development.

Under the current methodology, population estimates are derived by combining the Census counts by Indigenous identity for various Census years with the latest B.C. population estimates from BC Stats for the corresponding geographies. Using this approach, the estimates are adjusted for incompletely enumerated Indian reserves and Census net undercoverage (NCU).⁶ Population projections are based on assumptions about the future path of the components of population change (fertility, mortality and migration) combined with the component/cohort-survival method of projecting population, starting from base-year population estimates.

While the basic methodological approach has remained the same since 2009, the assumptions used in the projections have changed over time to reflect client needs and data considerations unique to each projection run. The assumptions and methodologies for this project are detailed in the following sections.

⁶ On some reserves/settlements enumeration was not permitted, was interrupted before it could be completed or the quality of enumeration was considered inadequate. In British Columbia one reserve (Esquimalt) was included in this category in both 2001 and 2006.

3. Methodology and Assumptions

3.1. Definition of Target Population

For previous work on Indigenous population estimates and projections, BC Stats has taken the target population as persons identifying with an Indigenous identity group as defined by the Census of Canada. This definition of the population universe stems from seminal work done by Statistics Canada for various clients, including the 1991 Royal Commission on Aboriginal Peoples. Their analysis resulted in recommending the use of an “Indigenous Identity” population.⁷

Using this definition has been understood to more accurately capture the notion of a core Indigenous population that is rooted in the concept of Indigenous cultural identity rather than legally conferred Registered Indian or Treaty status. The concept was meant to act as an “indicator of an individual’s feelings, allegiance or association” with Indigenous culture and the Indigenous peoples of Canada. In contrast, a target population definition based solely on registered North American Indian status is more restrictive in that it does not reflect the actual client base of provincial government agencies, which also includes persons identifying themselves as Métis, Inuit and non-registered North American Indian. Thus, the target population of this study will be all the individuals who identify as Indigenous in the quinquennial Census.

⁷ Statistics Canada replaced the term “Aboriginal group person” with “Indigenous group person” on April 1st, 2021. The wording of the definition and the categories were reworded, but the meaning was unchanged. For details, see [Statistics Canada \(2021\). Standards, data sources and methods](#). In this document, we follow Statistics Canada and substitute “Indigenous” for “Aboriginal” when describing methods that were developed prior to the change in terminology.

3.2. Population Estimates

The population estimates for Indigenous people in sub-provincial areas of B.C. are based on data from the 2011, 2016 and 2021 Census for all health areas of the province: i) Health Authorities (HAs), ii) Health Service Delivery Areas (HSDAs), iii) Local Health Areas (LHAs), and iv) Community Health Service Area (CHSAs).⁸

To account for the suppression of Census data due to small cell sizes, the population estimates were done hierarchically by age group up to five-year age groups. From the five-year age groups, the counts by single-year of age were obtained by using the methodology suggested by Rizzi et al. (2015). These counts were used when direct counts by single year were not available from the Census, aligning them with the population totals for each region. The population counts from this step are then prorated hierarchically using Iterative Proportional Fitting (IPF) to ensure that the population counts by Indigenous identity add up to their corresponding geographies.⁹

To account for the net Census undercoverage (NCU), the population of each geography was aligned with the population estimates for all health regions [published by BC Stats](#) for all Census years (2011, 2016 and 2021). These population estimates are prorated hierarchically by geography using the IPF method. As there is no currently accepted estimate of NCU for any Indigenous population subgroup (due to the small survey sample size used in Census coverage studies), the methodology uses BC Stats' population estimates, which are aligned with Statistics Canada's sub-provincial estimates for health regions, adjusted for NCU.¹⁰

Population estimates for the interim years between Census years are derived using linear interpolation between NCU-adjusted Census population counts. For estimates following the last Census year for which intercensal estimates are available, population projections are used in lieu. Figure 1 shows the population estimates by

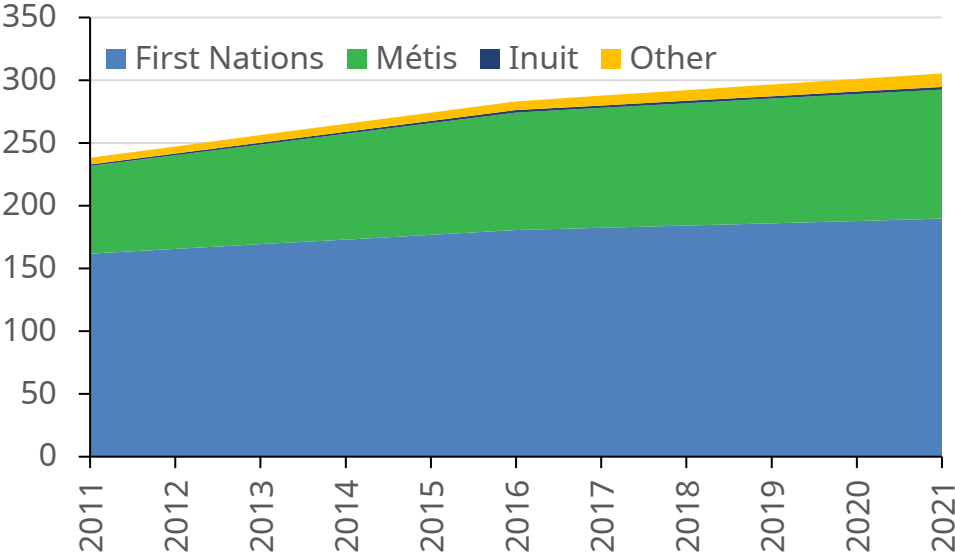
⁸ The current boundaries of the health geographies of British Columbia were defined in 2022 by the Ministry of Health and are available in the [BC Data Catalogue](#).

⁹ IPF is a mathematical procedure commonly used in demography and other statistical fields which adjusts population distributions of smaller localities to match an independent projection of their aggregate. For further details, see Judson and Popoff (2004).

¹⁰ Statistics Canada. [Table 17-10-0157-01](#) Population estimates, July 1, by health region and peer group, 2023 boundaries

Indigenous identity for British Columbia between 2011 and 2021 produced by BC Stats using this methodology. According to BC Stats’ population estimates, First Nations are the largest Indigenous group in B.C., followed by the Métis, which combined represent almost 96% of the Indigenous population in the province in 2021. Inuit and other indigenous identities represented 0.7% and 3.5%, respectively.

FIGURE 1: POPULATION ESTIMATES BY INDIGENOUS IDENTITY IN BRITISH COLUMBIA (THOUSANDS, 2011 - 2021)



Source: BC Stats (2025).

3.3. Population Projections

3.3.1. Component/Cohort-Survival Method

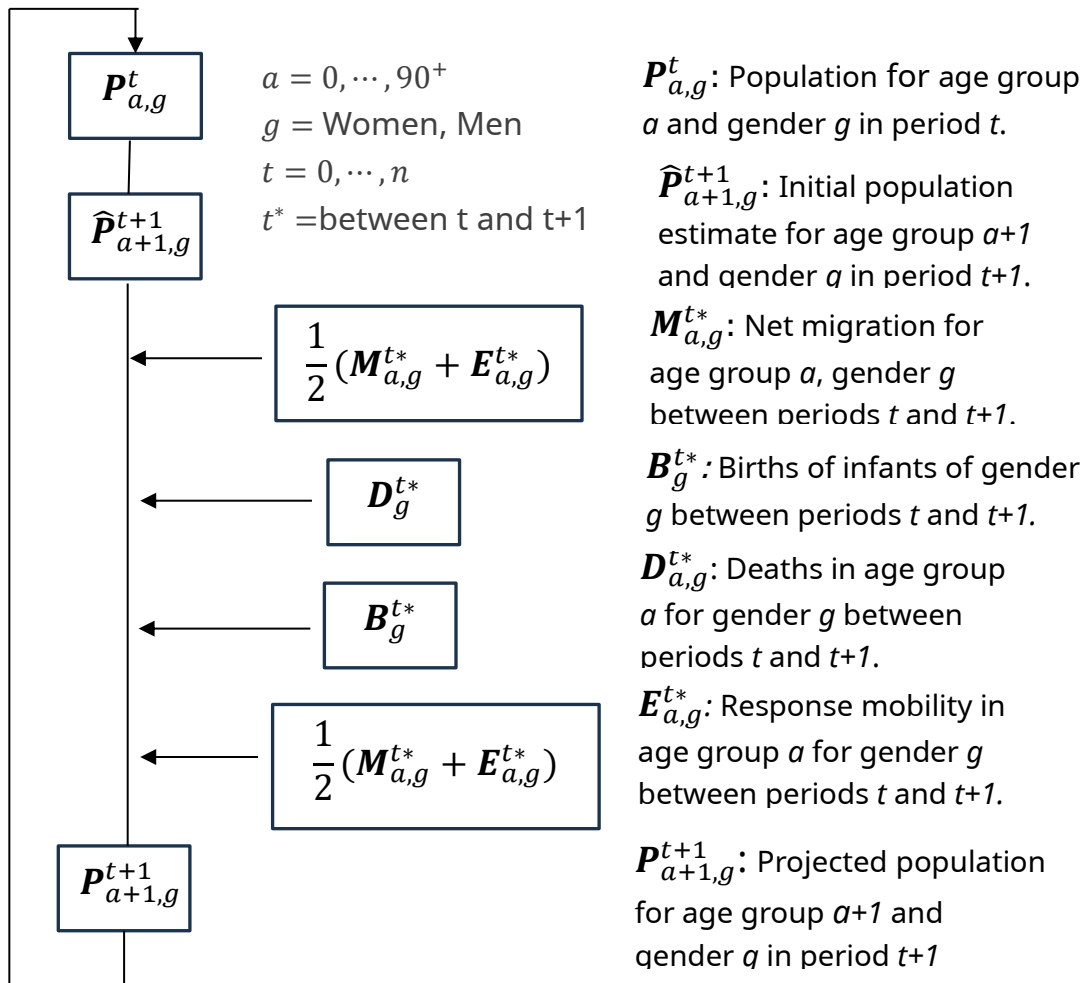
Population projections produced by BC Stats involve the application of a “Component/Cohort-Survival” (CCS) population model with explicit assumptions about fertility, mortality, and migration processes and their trending behaviour over time. In the case of Indigenous population projections, the CCS approach must account for the *response mobility* of individuals, which relates to changes in self-reported identity.¹¹ Compared to other population projection methods, a distinguishing feature of the CCS method is that it allows for direct control of each of the demographic components that determine the size and composition of a population.

The CCS method requires separate projections of each of the components of population change, namely births, deaths, inter- and intra-provincial migration, international migration, as well as possible inter- and intra-generational response mobility. With the component information, and initial base year estimates for population by age and gender, a projection for any subsequent year is obtained by promoting each age-gender cohort in the preceding year to the next age group, while accounting for the net effects of migration, response mobility, deaths, and births on the population of each cohort. This process is then repeated for the number of years required for the projection.

Figure 2 gives a diagrammatic representation of the process. The sources and/or derivation of each of the components of Figure 2 will be outlined over the remainder of this report.

¹¹ The term response mobility refers to the changes in the self-reported identity of individuals across time, particularly in the Census. This term has been used in a similar context by O’Donnell and LaPointe (2019) and Statistics Canada (2019). This component of population change will be discussed in more detail in section 6.3.

FIGURE 2: COMPONENT/COHORT MODEL FLOW CHART



3.3.2. Base Population

The base-year population used in the projection is the July 1st estimate of the Indigenous population, as defined in section 3.1. In particular, this study uses the population who identified as part of an Indigenous group in British Columbia (First Nations, Métis, Inuit, Other) in the 2021 Census as the starting point of the projection. As discussed in section 3.2, this population estimate is based on Census population counts adjusted for NCU and incompletely enumerated Indian Reserves.

3.4. Geography

Indigenous population estimates and projections are aggregated to the sub-provincial geographies established by the Ministry of Health and the Ministry of

Children and Family Development. These geographies nest hierarchically from the largest regions (e.g., Health Authorities) to the smallest areas (e.g., Community Health Service Areas) through the following hierarchically ordered geographies:¹²

- 1) Health Authorities (5)
- 2) Health Service Delivery Areas (16)
- 3) Local Health Area (89)
- 4) Community Health Service Area (231)

To ensure consistency in the estimates and projections between these two administrative boundaries, the estimates and projections will be made primarily for the administrative boundaries of the Ministry of Health. Conversion to the regions of the Ministry and Child and Family Development was applied using weights proportional to the NCU-adjusted population by Dissemination Blocks of the 2021 Census to aggregate to the following boundaries: ¹³

- 1) Regions of the Ministry of Child and Family Development (4)
- 2) Service Delivery Area (8)
- 3) Local Service Area (44)

¹² The number of partitions of British Columbia in each administrative boundary is in parentheses.

¹³ Since the administrative boundaries of the Ministry of Health allow for a more granular analysis, using this as the base geography ensures consistency between the two sets of administrative boundaries.

4. Fertility

4.1. Fertility Estimates

There are no directly observed data reporting the number of births by Indigenous identity population, so fertility rates must be estimated indirectly (Sheppard et al, 2017). This is true for all levels of geography, including national, provincial and sub-provincial.

The fertility rates for each Indigenous identity subgroup were estimated by utilizing the variability in the fertility rates of the 231 Community Health Service Areas of British Columbia and the composition of the Indigenous population in these areas. This approach utilizes the time and cross-sectional variation in the fertility rates across all CHSAs by Census year (2011, 2016 and 2021) to estimate the fertility rates by Indigenous identity. The model is described by equation (1):

$$\ln y_{a,i,t} = \alpha_i + \gamma_t + \beta_a + \sum_{j \in \{FN, M, I, O\}} \beta_j \cdot s_{a,i,j,t} + \varepsilon_{a,i,t} \quad (1)$$

where $\ln y_{a,i}$ is the natural logarithm of the age-specific fertility rate on CHSA i , age a during period t , α_i is a fixed effect by CHSA, γ_t is a fixed effect by year, β_a is a fixed effect by age, β_j is the marginal effect of increasing the participation of the Indigenous population j (First Nations/FN, Métis/M, Inuit/I or Other/O), $s_{a,i,j,t}$ is the share of the population of age a that identifies as part of the population j in CHSA i during period t according to the estimates for Census years and $\varepsilon_{a,i,t}$ is an error term with zero mean.¹⁴

The age-specific fertility rates for each Indigenous identity are estimated by setting the corresponding share of the population to 1 while leaving all other shares equal to zero. As such, the model estimated assumes that the variation across age-specific fertility rates is explained by the variation in the population's composition by

¹⁴ Age-specific fertility rate is the number of live births per 1,000 women in a specific age group. The calculation consists of dividing the number of births to mothers by the population of women, for each unique age, and then multiplying by 1,000. Total fertility rate is a derived calculation that represents the average number of births 1,000 women would have if their lifetime fertility was the same as the age-specific fertility rates (ages 15 to 49) estimated in a given year.

Indigenous identity, among other factors. These age-specific fertility rates are interpolated linearly between Census years to obtain the age-specific fertility rates of intercensal years. These estimates should be interpreted with caution considering the small size of these populations. As in the estimates for the Indigenous population prepared by Statistics Canada (2022), the estimated fertility rate for the Indigenous population in B.C. was higher than for the overall population.

4.2. Fertility Projections

The fertility projection follows the single-scenario framework, similar to the 2019 projections. In particular, the fertility rates of each of the Indigenous groups (First Nations, Métis, Inuit, Other) are assumed to continue a similar trend to the provincial-level fertility rates. However, the relative difference to the provincial rate is expected to remain constant over time. Table 2 shows the Total Fertility Rate (TFR) by Indigenous identity for each Indigenous identity obtained from estimating equation (1) at the health authority level. The calculated TFRs by Indigenous identity are considerably higher than the provincial rates, which are currently the lowest in Canada. These fertility rates should be considered only as estimates since they are estimated via equation (1) described above. As in Statistics Canada (2022), the fertility rate for all Indigenous identities is expected to continue the downward trend it has exhibited in the last few years.

TABLE 2: TOTAL FERTILITY RATE BY HEALTH AUTHORITY (CHILDREN PER WOMAN, 2011 - 2046)

Health Authority	Indigenous Identity	2011	2016	2021	2026	2031	2036	2041	2046
Interior	First Nations	1.989	1.898	1.623	1.476	1.479	1.461	1.431	1.392
	Métis	1.750	1.670	1.428	1.282	1.286	1.268	1.239	1.200
	Inuit	2.544	2.427	2.076	1.927	1.928	1.909	1.879	1.840
	Other	2.021	1.928	1.650	1.503	1.505	1.487	1.457	1.418
Fraser	First Nations	1.705	1.645	1.416	1.278	1.289	1.278	1.254	1.220
	Métis	1.500	1.447	1.246	1.108	1.118	1.107	1.082	1.048
	Inuit	2.180	2.103	1.811	1.674	1.685	1.675	1.652	1.619
	Other	1.732	1.671	1.439	1.301	1.312	1.301	1.277	1.244
Vancouver Coastal	First Nations	1.699	1.591	1.380	1.245	1.258	1.250	1.226	1.192
	Métis	1.495	1.400	1.214	1.079	1.091	1.083	1.058	1.024
	Inuit	2.173	2.035	1.765	1.631	1.645	1.639	1.616	1.583
	Other	1.727	1.617	1.402	1.268	1.280	1.273	1.249	1.215
Vancouver Island	First Nations	2.089	1.973	1.681	1.553	1.571	1.564	1.540	1.510
	Métis	1.838	1.736	1.479	1.350	1.366	1.359	1.334	1.303
	Inuit	2.671	2.523	2.150	2.025	2.045	2.040	2.018	1.990
	Other	2.123	2.005	1.709	1.580	1.598	1.592	1.568	1.538
Northern	First Nations	2.815	2.660	2.284	2.164	2.192	2.195	2.181	2.161
	Métis	2.477	2.340	2.010	1.887	1.913	1.915	1.898	1.876
	Inuit	3.599	3.401	2.921	2.806	2.840	2.848	2.837	2.822
	Other	2.860	2.703	2.321	2.201	2.230	2.234	2.219	2.199
Province	First Nations	2.098	1.977	1.688	1.551	1.559	1.543	1.510	1.467
	Métis	1.847	1.739	1.486	1.348	1.356	1.340	1.308	1.266
	Inuit	2.683	2.528	2.159	2.022	2.031	2.014	1.979	1.935
	Other	2.133	2.009	1.716	1.578	1.587	1.571	1.537	1.495
	Total Population	1.434	1.369	1.153	1.017	1.021	1.007	1.000	1.000

5. Mortality

As with fertility, the estimation and projection of mortality must be done indirectly, as there are no data sources available that reports mortality rates for all Indigenous populations in B.C. As a result, the death counts by age and gender that are used as inputs to the CCS projection method are estimated indirectly.¹⁵

5.1. Mortality Estimates

The mortality rates used in this projection were taken from the estimates of life expectancy by Indigenous identity calculated by Dion et al. (2024) for B.C. Since these estimates are only available at the provincial level, the same mortality rates are applied to the corresponding Indigenous identity in all sub-provincial areas.

Dion et al. (2024) utilized linkages between the long-form Census and the Canadian Vital Statistics, also known as the Canadian Census Health and Environment Cohorts (CanCHECs), to estimate life expectancy by Indigenous identity for various regions of Canada, including British Columbia.

Dion et al. (2024) did not calculate a life expectancy for Inuit in British Columbia due to the small size of this population in the province. The national average was therefore used to calculate Inuit life expectancy. Similarly, the life expectancy at birth for the Indigenous identity “Other,” which is not available in Dion et al. (2024), was obtained by averaging the life expectancy of Métis and First Nations as done in previous projections (BC Stats, 2009).

¹⁵ The First Nations Health Authority published Life Expectancy at Birth and crude mortality indicators for First Nations residing in B.C. in its 2024 [First Nations Population Health and Wellness Agenda](#). This report, however, does not include mortality indicators for Métis, Inuit and other Indigenous groups in the province. Therefore, the mortality estimates by Indigenous identity used in this report are linked to Census data, in a similar fashion to the Indigenous population estimates and projections produced by Statistics Canada (2022) and other statistical agencies. Mortality indicators constructed using other data sources, like the mortality indicators published by the First Nations Health Authority which uses data from the BC Vital Statistics Agency and the client roster of the Medical Service Plan of B.C., might show a different trend from the data shown here.

5.2. Mortality Projections

The literature suggests that the mortality of the Indigenous population is substantially higher than for the non-Indigenous population (Bougie et al., 2019; Sheppard et al., 2017), with gaps of more than 10 years in life expectancy at birth relative to the overall population. This disparity is deeply rooted in the ongoing impacts of settler colonialism, which has led to intergenerational trauma and Indigenous-specific racism. These factors reinforce deeply embedded ideologies of systemic white supremacy, perpetuating health inequities and contributing to the significantly higher mortality rates observed among Indigenous communities.

While there is some evidence that the life expectancy of Indigenous communities is increasing and, in some cases, converging with the mortality observed in the non-Indigenous population,¹⁶ the evidence of convergence is limited.¹⁷ For this projection, the age-specific mortality rate is expected to follow the same trend as the provincial average, increasing over time, following the assumptions used in the projections for the Indigenous population of Statistics Canada (2022). However, the spread in life expectancy relative to the overall population is assumed to remain constant for the foreseeable future, as shown in Table 3.

TABLE 3: LIFE EXPECTANCY AT BIRTH (IN YEARS, 2011 - 2046)

Year	Indigenous Identity				Total Population
	First Nations	Métis	Inuit	Other	
2011	75.22	79.88	74.18	77.48	81.59
2016	75.23	81.44	71.62	78.29	81.60
2021	74.82	80.63	71.27	77.85	80.84
2026	76.27	81.91	72.53	79.49	82.12
2031	76.95	82.69	73.12	80.26	82.90
2036	77.57	83.37	73.65	80.95	83.58
2041	78.14	84.01	74.15	81.61	84.22
2046	78.69	84.61	74.62	82.23	84.82

Source: Data from 2011 and 2016 for First Nations, Métis, and Inuit were taken from Dion et al. (2024).

¹⁶ The British Columbia Office of the Provincial Health Officer and the First Nations Health Authority (2018) found that the life expectancy of First Nations seems to be increasing between 2011 and 2015). Additionally, Feir and Akee (2019) observed that the mortality of First Nations Indigenous males was converging with the mortality rates observed for non-Indigenous males.

¹⁷ As mentioned in Statistics Canada (2022), while there is evidence to suggest that life expectancy for Indigenous communities is increasing there is little in the literature to suggest that that there is convergence in the mortality rates between the Indigenous and non-Indigenous populations.

6. Migration

6.1. Intra-Provincial Migration

Intra-provincial migration is estimated using Census data from the last three Census years. The Census dataset includes historical information on mobility (separated by Indigenous identity, age, and gender) for individuals who lived in a different Health Authority of British Columbia one year and five years prior to Census Day. This mobility data is used to calculate net intra-provincial migration rates by Indigenous group and Health Authority for each of the last three Census years, as well as the age and gender distribution of intra-provincial migrants in those years.

Net intra-provincial migration rates by Indigenous identity and Health Authority are assumed to remain constant over the projection period. The constant annual rates are obtained by using the rates observed in the last available Census. The age and gender distribution of intra-provincial migrants is also assumed to remain constant over the projection period.

6.2. Inter-Provincial Migration

Inter-provincial migration is projected using Census data from the last Census. The Census dataset includes information on mobility (separated by Indigenous identity, age, and gender) for individuals who lived in a different province one year and five years prior to Census Day, including movers who left or arrived in British Columbia over those periods. This data is used to calculate net inter-provincial migration rates by Indigenous group and Health Authority for the 2021 Census, as well as the age and gender distribution of inter-provincial migrants.

As with intra-provincial migration, net inter-provincial migration rates by Indigenous group and Health Authority are assumed to remain constant over the projection period. They are calculated by taking the annual rates estimated for the 2021 Census. The age and gender distribution of inter-provincial migrants is also assumed to remain constant over the projection period with the assumed distribution based on 2021 Census data. Table 4 summarizes the consolidated inter- and intra-provincial net migration rate.

TABLE 4: NET MIGRATION RATE BY HEALTH AUTHORITY (% , 2011 - 2046)

Health Authority	Indigenous Identity	2011	2016	2021	2026	2031	2036	2041	2046
Interior	First Nations	-0.849	0.444	0.685	0.685	0.685	0.685	0.685	0.685
	Métis	-0.427	1.310	0.464	0.464	0.464	0.464	0.464	0.464
	Inuit	2.788	1.462	-0.211	-0.211	-0.211	-0.211	-0.211	-0.211
	Other	-0.663	-0.195	-0.183	-0.183	-0.183	-0.183	-0.183	-0.183
Fraser	First Nations	1.862	2.952	1.360	1.360	1.360	1.360	1.360	1.360
	Métis	1.806	1.931	1.098	1.098	1.098	1.098	1.098	1.098
	Inuit	-4.502	-0.096	-0.891	-0.891	-0.891	-0.891	-0.891	-0.891
	Other	0.797	2.105	0.292	0.292	0.292	0.292	0.292	0.292
Vancouver Coastal	First Nations	-2.437	-2.012	-1.818	-1.818	-1.818	-1.818	-1.818	-1.818
	Métis	-0.707	-1.881	-2.030	-2.030	-2.030	-2.030	-2.030	-2.030
	Inuit	3.940	-0.022	-1.555	-1.555	-1.555	-1.555	-1.555	-1.555
	Other	-3.570	-2.855	-0.516	-0.516	-0.516	-0.516	-0.516	-0.516
Vancouver Island	First Nations	0.211	0.264	0.323	0.323	0.323	0.323	0.323	0.323
	Métis	-1.355	1.560	1.719	1.719	1.719	1.719	1.719	1.719
	Inuit	5.987	1.550	5.813	5.813	5.813	5.813	5.813	5.813
	Other	0.591	0.501	-1.518	-1.518	-1.518	-1.518	-1.518	-1.518
Northern	First Nations	-0.172	0.235	0.043	0.043	0.043	0.043	0.043	0.043
	Métis	-1.274	-1.126	-0.726	-0.726	-0.726	-0.726	-0.726	-0.726
	Inuit	0.000	0.132	0.396	0.396	0.396	0.396	0.396	0.396
	Other	-0.390	-0.407	1.454	1.454	1.454	1.454	1.454	1.454
Province	First Nations	-0.076	0.659	0.348	0.383	0.383	0.383	0.383	0.383
	Métis	-0.352	0.635	0.369	0.402	0.402	0.402	0.402	0.402
	Inuit	1.353	0.674	0.924	0.912	0.912	0.912	0.912	0.912
	Other	-0.375	0.133	-0.093	-0.093	-0.093	-0.093	-0.093	-0.093

6.3. Response Mobility

Response Mobility represents changes in an individual's affiliation through shifts in self-identification. It represents an additional component of population change for Indigenous populations in that an individual counted in one Indigenous group at one point in time may be counted in a different group in the future.¹⁸

Response mobility takes two forms: inter-generational and intra-generational. Inter-generational response mobility occurs when a child identifies with a different distinctions-based group than one or both parents; this phenomenon is more prevalent when the parents themselves do not identify with the same distinctions-based group. Intra-generational response mobility occurs when, over an individual's lifetime, their affiliation with a distinctions-based group changes.

Inter-generational response mobility can be measured directly by relating the Indigenous identity reported for children with that reported for their parents; this information is available from the Census and the National Household Survey. For these projections, inter-generational response mobility for B.C.'s Indigenous population is estimated by using the rates of children by Indigenous identity and the Indigenous identity of their mother.

The estimation of intra-generational response mobility is more challenging as there are no Census/NHS questions asking whether the self-identification of household members has changed over time. Previous work by Statistics Canada used the residual method of estimation described in Guimond (1999). The residual method involves calculating the difference between the known population estimate at a given date and a hypothetical population estimate that is calculated on the assumption of zero response mobility.

The hypothetical estimate is calculated by taking the known population estimate at Census day and adjusting it for the estimated components of population change (deaths, net migration) during the interim period plus any other known factors (e.g. NCU) causing the population estimate to differ between the two dates. When calculated for a single age/gender cohort, the residual difference between known and hypothetical population estimates can be attributed to intra-generational response mobility within that cohort. The

¹⁸ An example of response mobility's effect is the change in the Indigenous population between 1996 and 2001, where only half of the population increase is estimated to be attributable to migration and natural increase (births minus deaths); the remainder of the increase in the Indigenous population appeared to be due to response mobility (Guimond, 1999; Caron-Malenfant et al, 2014).

derived time series of residuals and their age/gender composition can therefore be treated as another component of population change input into a CCS projection model.

A positive response mobility rate would imply movement from the non-Indigenous population to a particular indigenous group. Similarly, a negative response mobility rate implies flows from that Indigenous identity to the non-Indigenous population (i.e. people who stopped identifying themselves as part of an Indigenous group).¹⁹ In these projections, the response mobility is assumed to remain constant throughout the forecasting horizon at the average of the last two Census periods of each Health Authority. The response mobility rates estimated for the different periods and the one used in the projections are shown in Table 5.²⁰

¹⁹ For simplicity in this study flows were assumed to be only from Indigenous to non-Indigenous groups and vice versa. As such, the flows between different Indigenous communities were not considered.

²⁰ In previous projections by BC Stats, intra-generational response mobility was assumed to be zero for the Inuit and Other Indigenous sub-groups due to insufficient data.

TABLE 5: NET RESPONSE MOBILITY RATE BY HEALTH AUTHORITY (% , 2011 - 2046)

Health Authority	Indigenous Identity	2011	2016	2021	2026	2031	2036	2041	2046
Interior	First Nations	2.619	-1.062	0.154	0.114	0.114	0.114	0.114	0.114
	Métis	6.869	-0.865	1.782	1.313	1.313	1.313	1.313	1.313
	Inuit	-0.715	-1.487	0.510	0.376	0.376	0.376	0.376	0.376
	Other	-1.394	-0.899	-0.997	-0.997	-0.997	-0.997	-0.997	-0.997
Fraser	First Nations	1.350	-3.988	-0.318	-0.234	-0.234	-0.234	-0.234	-0.234
	Métis	3.181	-3.252	0.355	0.262	0.262	0.262	0.262	0.262
	Inuit	-0.493	-0.174	0.510	0.376	0.376	0.376	0.376	0.376
	Other	-1.631	-1.748	-0.997	-0.997	-0.997	-0.997	-0.997	-0.997
Vancouver Coastal	First Nations	3.661	-0.246	0.673	0.496	0.496	0.496	0.496	0.496
	Métis	0.795	-1.612	1.782	1.313	1.313	1.313	1.313	1.313
	Inuit	0.004	-0.552	0.510	0.376	0.376	0.376	0.376	0.376
	Other	-0.478	-0.808	-0.997	-0.997	-0.997	-0.997	-0.997	-0.997
Vancouver Island	First Nations	1.208	-1.040	0.017	0.013	0.013	0.013	0.013	0.013
	Métis	5.271	-0.807	0.842	0.620	0.620	0.620	0.620	0.620
	Inuit	-0.783	-1.556	0.510	0.376	0.376	0.376	0.376	0.376
	Other	-0.696	-1.460	-0.106	-0.106	-0.106	-0.106	-0.106	-0.106
Northern	First Nations	0.585	-0.907	0.673	0.496	0.496	0.496	0.496	0.496
	Métis	3.543	-2.447	0.891	0.657	0.657	0.657	0.657	0.657
	Inuit	-0.231	-0.890	-0.324	-0.239	-0.239	-0.239	-0.239	-0.239
	Other	-0.978	-1.278	-0.106	-0.106	-0.106	-0.106	-0.106	-0.106
Province	First Nations	1.719	-1.608	0.177	0.122	0.122	0.122	0.122	0.122
	Métis	4.249	-1.817	1.082	0.796	0.796	0.796	0.796	0.796
	Inuit	-0.484	-0.967	0.350	0.261	0.261	0.261	0.261	0.261
	Other	-1.099	-1.281	-0.629	-0.629	-0.629	-0.629	-0.629	-0.629

7. Conclusion

Accurate population estimates and projections for Indigenous communities in sub-provincial areas of B.C. are key for Reconciliation and improving the provision of services, as well as supporting the establishment of a regional information governance centre ([Action Plan 3.14](#)). This edition of BC Stats' Indigenous population estimates and projections introduced new methodological changes with the following objectives:

- Producing population estimates and projections at a more granular geographical level.
- Applying a methodology that allows the estimation of the components of population change by Indigenous identity for sub-provincial areas of B.C.

The estimates and projections for smaller areas, as well as the estimated components of population change, should be taken with caution due to the small size of these populations and the imputations needed to compute them. Additionally, future changes in eligibility under the Indian Act and public awareness around Indigenous self-identification, which by their unforeseeable nature are not incorporated in these projections, might have significant effects on the response mobility with respect to the rates used in these projections. This might significantly impact the accuracy of these projections.

Future editions of these estimates and projections will continue to improve and refine the data and methodology used. Examples of the methodological improvements that BC Stats is considering introducing in future editions include:

- on and off-reserve estimation of population counts
- improvements on the estimation of the age-specific fertility and mortality rates.
- on and off reserve estimation of components of population change
- aggregation to other geographies such as regional districts, municipalities, etc.

8. References

British Columbia Office of the Provincial Health Officer and First Nations Health Authority (2018). *Indigenous health and well-being*.

BC Stats (2019). *2011-2044 British Columbia Indigenous Population Estimates and Projections*.

Bougie, E., T. Bushnik and M. Tjepkema (2019). "Life expectancy of First Nations, Métis and Inuit household populations in Canada." *Health Reports*, Statistics Canada. DOI: <https://www.doi.org/10.25318/82-003-x201901200001-eng>

Caron-Malenfant, É., S. Coulombe, E. Guimond, C. Grondin and A. Lebel (2014). "Ethnic Mobility of Aboriginal Peoples in Canada Between the 2001 and 2006 Censuses." *Population-E*. 69 (1). p. 29-54.

Dion, P., M. A. Tremblay, R. Gagnon and E. Sirag. (2024) "Life Expectancy at Birth and Infant Mortality Rates of Indigenous Populations in Canada from 2004 to 2016." *Canadian Studies in Population*, Vol. 51(3), pp. 1927-629X.

Feir, D. and R. Akee (2019). "First Peoples lost: Determining the state of status First Nations mortality in Canada using administrative data." *Canadian Journal of Economics*. Volume 52 (2). pp. 490-525.

First Nations Health Authority and Office of the Provincial Health Officer (2024). *First Nations Health and Wellness Agenda, First Interim Update, 2024*.

Grabill, W. H. and L.-J. Cho (1965). "Methodology for the Measurement of Current Fertility from the Population Data on Young Children." *Demography* 2: pp. 50-73.

Guimond, E. (1999). Ethnic mobility and the demographic growth of Canada's aboriginal populations from 1986 to 1996. In A. Bélanger (Ed.), *Report on the demographic situation in Canada, 1998-1999* (Catalogue No. 91-209-XPE, pp. 187-200). Ottawa: Industry Canada.

Judson, D.H. and C.L. Popoff (2004). Selected general methods. In J.S. Siegel and D.A. Swanson (Eds), *The methods and materials of demography* (2nd edition, pp. 677-732). San Diego, CA: Elsevier Academic Press.

Katz, A., K. A. Kinew, L. Star, C. Taylor, I. Koseva, J. Lavoie, C. Burchill, M. Urquia, A. Basham, L. Rajotte, V. Ramayanam, J. Jarmasz, and S. Burchill (2019). *The Health Status of and Access to Healthcare by Registered First Nation Peoples in Manitoba*.

Morency, J.-D., E. Caron-Malenfant and D. Daignault (2018). "Fertility of Aboriginal People in Canada: An Overview of Trends at the Turn of the 21st Century." *Aboriginal Policy Studies*. Volume 7(1).

Norris, M.J. (1996). *Contemporary Demography of Aboriginal Peoples in Canada*. In *Changing Numbers, Changing Needs: American Indian Demography and Public Health*.

O'Donnell, V. & R. LaPointe (2019). "Response Mobility and the Growth of the Aboriginal Identity Population 2006-2011 and 2011-2016." *National Household Survey: Aboriginal Peoples*, Statistics Canada.

Statistics Canada (2015). *Projections of the Aboriginal population and households in Canada, 2011 to 2036*. Catalogue no. 91-552-X. ISSN 1927-6389.

Statistics Canada (2019). "Aboriginal Peoples Technical Report." *2016 Census of Population*. Catalogue no. 98-307-X2016001. ISSN 978-0-660-26771-5.

Statistics Canada (2022). *Projections of the Indigenous populations and households in Canada, 2016 to 2041: Overview of data sources, methods, assumptions and scenarios*. Catalogue no. 17-20-0001. ISBN 978-0-660-37500-7

Siggner, A. J., and R. Costa (2005). *Aboriginal Conditions in Census Metropolitan Areas, 1981-2001*. Canadian Social Trends, Statistics Canada, Catalogue no. 11-008.

Sheppard A.J., G.D. Shapiro, T. Bushnik, R. Wilkins, S. Perry, J.S. Kaufman, M.S. Kramer, S. Yang (2017). "Birth outcomes among First Nations, Inuit and Métis populations." *Health Report 2017* Nov 15;28(11):11-16. PMID: 29140536.

Ram, B. (2004). "New Estimates of Aboriginal Fertility, 1966-1971 to 1996-2001." *Canadian Studies in Population*, Vol. 31 (2), pp. 179-196.

Rizzi, S., J. Gampe, and P. H.C. Eilers (2015). "Efficient Estimation of Smooth Distributions from Coarsely Grouped Data." *American Journal of Epidemiology*, Vol. 182 (2), pp. 138 - 147.

Verma, R. B. and S. Loh (2008). "An Evaluation of the Pearsonian Type I Curve of Fertility for Aboriginal Populations in Canada, 1996 to 2001." *Canadian Studies in Population*, Vol. 35 (2), pp. 357-372.



BCStats

BC Stats is the provincial government's leader in statistical and economic research, information and analysis essential for evidence-based decision-making. The goal is to increase overall business intelligence—information decision makers can use.

9410 Stn Prov
Govt Victoria, B.C.
V8W 9V1

Email: bc.stats@gov.bc.ca
Web: www2.gov.bc.ca/gov/content/data/statistics