PEOPLE 2020: BC Sub-Provincial Population Projections
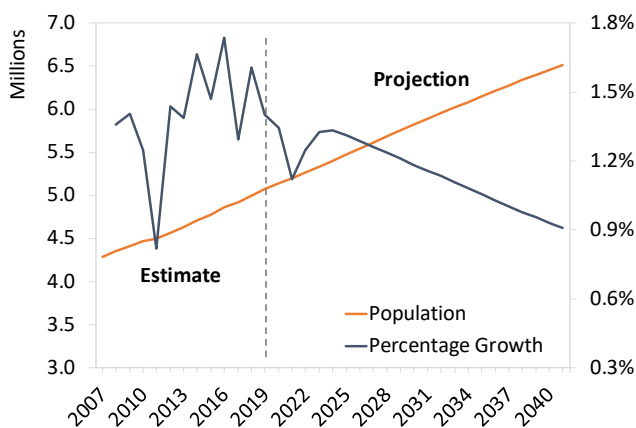
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Introduction

PEOPLE 2020 (**P**opulation **E**xtrapolation for **O**rganizational **P**lanning with **L**ess **E**rror) is BC Stats' latest annual population projection. This projection covers the years from 2020 to 2041, with information available for numerous provincial geographies including Local Health Area, Health Service Delivery Area, Health Authority, School District, College Region, Regional District and Development Region.

In this new set of BC population projections, all the historical population figures for all geographic types were revised significantly due to the adjustments made for the census-undercounting correction. As a result of this correction, BC's total population in the year of 2016 now shows approximately 100,000 more persons than the un-adjusted census figures previously reported.

BRITISH COLUMBIA POPULATION ESTIMATE AND PROJECTION

Source: BC Stats; Statistics Canada

Projection Highlights

It is expected that the B.C. population will grow at a reduced rate of 1% over the 2020/21 period due to the impact of the Coronavirus Pandemic on migration to an within Canada. The annual rate should then recover to 1.3% during the next few years before the growth rate gradually decline to about 0.9% at the end of the projection period. BC's population is expected to increase from a total of 5,139,568 persons in 2020 to 6,515,558 in 2041.

BRITISH COLUMBIA POPULATION BY DEVELOPMENT REGION

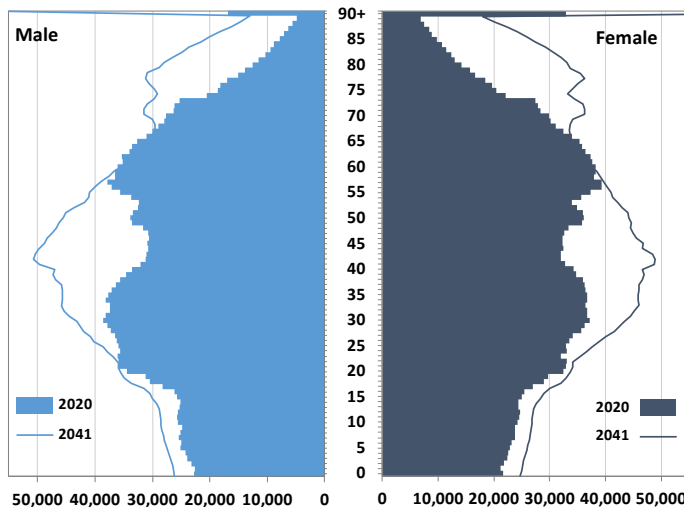| Development Regions	Population as at July 1st (000s)			Average annual growth
	2020	2030	2041	2020-2041
Van Isle/Coast	893	979	1,057	0.8%
Mainland/Southwest	3,129	3,630	4,167	1.4%
Thompson Okanagan	618	679	738	0.9%
Kootenay	169	175	177	0.2%
Cariboo	169	177	181	0.3%
North Coast	57	62	65	0.6%
Nechako	38	45	52	1.4%
Northeast	66	73	78	0.9%
B.C. Total	5,140	5,820	6,516	1.1%

Source: BC Stats

The Lower Mainland, home to about 61 per cent of all the province's residents in 2020, is expected to see an average annual growth of 1.4% betweeb 2020 and 2041. Mainland/Southwest along with Nechaco are the two development regions in BC that will experience population growths consistently higher than the provincial level. The Northeast, Thompson-Okanagan, Vancouver Island-Coast and Northeast development

regions will see similar population growth but at slightly lower than provincial level, whereas the population changes in the Kootenay and Cariboo regions will see almost no growth in the later part of the projection periods.

As BC's population continues to age, the relative porportion of senior population will increase. In 2020, the number of persons aged 65 and older was estimated at 985,812 persons, accounting for approximately 19% of all the residents in BC. Senior population is projected to steadily increase to represent almost 25% of all BC residents (or 1,607,284 persons) in 2041. This will represent a 63% growth of senior population between 2020 and 2041.

BRITISH COLUMBIA POPULATION – 2020 VERSUS 2041

Source: BC Stats

On the other hand, the proportion of working age population in BC will be declining slowerly over the next 20 years. In 2020, the proportion of population aged 20-64 (workers) represented approximately 61% of the province's overall population. However, the number of BC workers, while increasing in number over time, will be growing slower than that of the senior population. The proportion of worker population will only account for 58% of all BC residents by 2041. The dwindling trend of worker population, combined with the expectation of a relatively flat fertility trend will result in a

slow growth of youth population under the age of 20 years.

One important social-economic implication of having a declining proportion of workers in the population is the change in dependency ratios in the province. Other things being equal, there will be more youths and seniors depending on the producxtivity of the working population in the future.

BRITISH COLUMBIA POPULATION DEPENDENCY RATIOS

	2020	2041
Youth Population (Age 0-19)	997,156	1,121,379
Senior Population (Age 65+)	985,812	1,607,284
Working Age Population (Age20-64)	3,156,600	3,786,895
Youth dependency	31.6	29.6
Senior dependency	31.2	42.4
Total dependency	62.8	72.1

Dependency ratio = selected group per 100 workers (age 20-64)

Source: BC Stats

Proportionally, there will be consistently more women than men living in BC throughout the whole projection period. Population gender ratio, expressed as the number of men per 100 women in the population, is 98.0 in year 2020 and is projected to decline slowly and steadily to 96.5 in year 2041.

Background

Each year BC Stats produces a new set of sub-provincial population projections by age and gender. The reference date for the projections is July 1st of that year and the projection release date is usually in the early part of the fourth quarter. Currently, the projections are prepared for twelve sub-provincial geographies including regional districts, local health areas, school districts and various other B.C. administrative boundaries.

Production timing of PEOPLE follows a business cycle in which a set of population estimates are first prepared for the current calendar year. These estimates are used as the base population for projections and

usually published in December of each year. The development of PEOPLE projections usually starts in the second quarter of the subsequent year. For this report, the 2019 estimates were produced in January 2020, while the projections for 2020 onward were produced in August of 2020.

The sub-provincial population projection is controlled at the aggregate level by a separate provincial level population projection. The BC-level projection sets the level for each component of population growth to which all sub-provincial components should conform. The components are births, deaths and net migration.

Local Heath Areas (LHAs) boundaries—a health care related administrative region in BC—are the base level of geography used in the population projection model. All other sub-provincial projections are derived from the LHA projections according to a pre-determined geographic relationship. The current projection covers the period 2020 to 2041 with 101 age groups (aged 0 up to 100 years old plus) and by gender (male, female and total).

Methodology

British Columbia small area population projections result from the application of a "Component/Cohort-Survival" population model to assumptions dealing with fertility, mortality and migration.

The Component/Cohort-Survival method requires separate projections for each of the components of population change, namely fertility, mortality and net migration. With this information, and with a base year age-specific estimate of population, a projection for any subsequent year is made by promoting each age group in the preceding year to the next highest age group, while at the same time considering the effects of net migration, births and deaths.

The BC Vital Statistics Agency supplies BC Stats with up-to-date data regarding vital events within the province. This is used to build a historic picture of births and deaths at the sub-provincial level and is used to forecast what might happen in the future. In general, vital events remain realtively stable over time from a probabilistic perspective. As such, it is expected that certain historical trends will continue within the foreseeable future, or over the projection period. Migration on the other hand is far more volatile and challenging to predict. Government policy changes and/or regional economies could have a major short-term impact on migration level or, for example, major projects started in isolated areas may result in a large influx of new residents for several years.

BC Stats attempts to address these challenges through careful consideration of available information. With regards to assumptions for migration across the province, the Major Projects Inventory (MPI)[1] provides a tangible selection of large-scale infrastructure developments (each over $15 million in capital costs) at varying stages of completion. Also, major local facility development or closures such as a mine closure may have significant impacts on small areas in terms of movement of people. Migration assumptions are revisited annually to verify and possibly adjust previous considerations, due to the unpredictable nature of certain local economic activities.

Discussion

The accuracy of the sub-provincial population projections hinges on several assumptions including the

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[1]Major Projects Inventory, Ministry of Advanced Education, Skills and Training: https://www2.gov.bc.ca/gov/content/employment-business/economic-development/industry/bc-major-projects-inventory

accurate projection of future migration levels, the quality of the base population and the reliabilty of the projected BC level population. It should also be noted that because the process of change is cumulative, the reliability of the projections may decrease over time. Historical data for international, inter-provincial and intraprovincial migration at a sub-provincial level has proven to be very volatile. Many factors such as relative economic conditions, changes in immigration policy, regional housing development/prices can influence population mobility in a way that is difficult to predict accurately.

In this newly released projection, the base year population is obtained from BC Stats' current population estimates (July 1, 2018) that are in turn based on the the 2016 Census adjusted for net census undercoverage (NCU) and demographic growth since May 2016. As the NCU adjustment was performed for the current (2018) base population estimates in September 2019, this newly released population projection will see a significant revision when compared to the previousy releases. The adjustment due to NCU has resulted in adding more than 100,000 persons to the overall BC population for the census year of 2016.

For PEOPLE 2020, the latest births and deaths data from the Vital Statistics Agency was used to update the fertility and mortality rate projections. While projected mortality rates remained similar to that used in previous versions of PEOPLE, fertility rates saw a significant decrease. As a result, most regions are projected to have fewer young people over the projection horizon and caution should be used when comparing this new projection with previous releases.

The above discussion highlights some of the challenges and limitations in the preparation of the annual sub-provincial population projections by age and gender. However, previously published evaluations and analyses have shown that the cohort-survival methodology employed is robust and reliable for producing useful small area population projections with acceptable accuracy.